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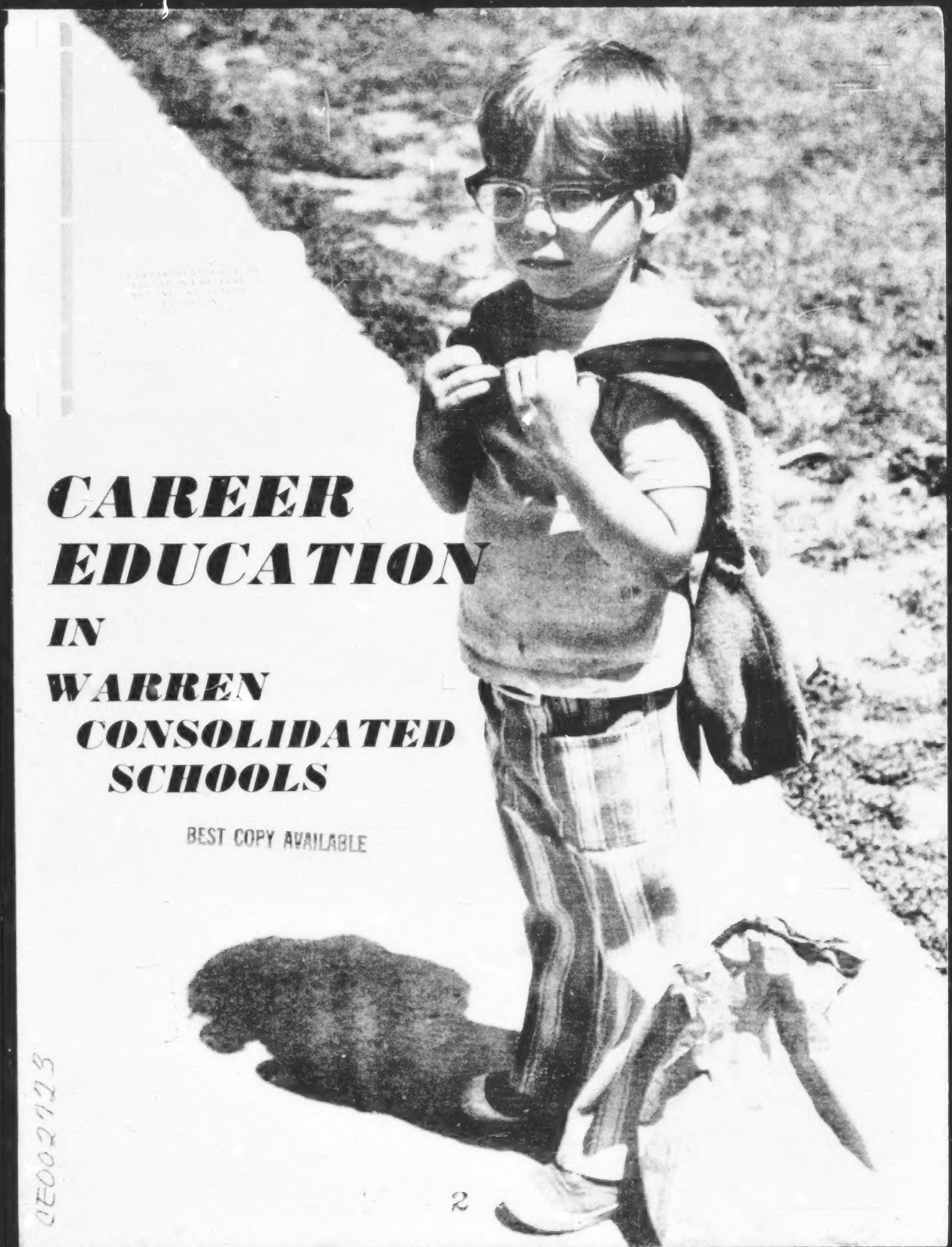
ABSTRACT

Career education can be the vehicle through which students will be better equipped to face life outside of the educational system. Comprehensive career education programs are divided into phases: self-awareness and career awareness, career exploration, and preparation for job placement. Programs begin at the kindergarten level and extend through adult and continuing education; the phases are recycled according to individual needs and wants. The long-range goal is economic independence and personal satisfaction for the individual as he assumes his various roles in life. In the Warren program, personnel needs were surveyed, and meetings to plan objectives for students and staff were held. Instructional materials were developed according to eight guidelines and followed the USOE occupational clusters division. The purpose of each unit of instruction at each grade level was specified, and, pending official publication of external evaluators, it is felt program objectives were accomplished. The 125 pages of appendixes contain related material: objectives, forms, surveys, and three examples of instructional units (Family Members as Producers and Consumers, 16 pages; Occupations in National Resources, 55 pages, and Occupations in the Stock Market, 30 pages). (AG)



# CAREER EDUCATION IN WARREN CONSOLIDATED SCHOOLS

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# Project CARE

## Career Awareness through Realistic Experiences

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*Project Coordinator*
*1971 - 1974*

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FOREWORD

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We sincerely appreciate the encouragement and understanding of the Board of Education and Dr. Olin L. Adams, Jr., Superintendent, who approved the three-year pilot Project. The Project began with the 1971-72 school year and was cooperatively funded by the Michigan Department of Education and Warren Consolidated Schools.

For their assistance and cooperation, we wish to give special thanks to Mr. William Weisgerber and Mr. James L. Mahrt of the Michigan Department of Education. Also, for his outstanding consultive services, we are grateful to Dr. Cas Heilman, Associate Professor of Secondary Education and Curriculum, Michigan State University.

Over 50 percent of the district's 34,000 K-12 students and 8,000 Adult and Continuing Education students had an opportunity to participate in the program. Teachers from all subject areas, media specialists, and counselors from all 47 schools were involved to varying degrees.

Every day, teachers and students are doing many new and exciting things. Through this "bird's eye view" publication, we hope others can benefit from our experiences.

B. Carol Turner

Alfred F. Braccini

# Project

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ACKNOWLEDGEMENTS

The staff recognizes the Project's success was due to outstanding community cooperation, the involvement and participation of parents, local industries, governmental agencies, and representatives of labor. Their support for the program was demonstrated by opening their facilities to students and teachers, serving as human resources, and furnishing media, supplies and materials.

A sincere "thank you" to the many teachers who worked tirelessly and endlessly in developing, implementing, revising, and evaluating instructional materials. Also, for their assistance during the initial stages of development, we acknowledge Mr. Charles Kratz, Mrs. Anne Baker, and Mr. Ed Wright.

For typing and re-typing the instructional units, the staff deeply appreciates the patience and tolerance of Mrs. Lydia Koch, Mrs. Sue Grant, and Mrs. Virginia Chadwick.

For their efforts in making this publication possible, we wish to give special thanks to Mrs. Edna Lawler and Mr. Earl Wininger; also, we sincerely appreciate the many hours they spent printing and collating instructional materials.

We thank Mr. Fran Fredal, Supervisor of Trade and Industry, for his consistent help and consideration, especially with the seventh grade Career Awareness Course.

We are grateful to Mr. Astor L. Simpson, Field Coordinator, Michigan Department of Education, for the contributions he made while serving as external evaluator.

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## RATIONALE

The clamor created by the hashing and rehashing of the career education concept is heard and felt in circles all across the country. Why? It is widely recognized that serious problems exist in our educational systems today.

> Whether we want to or not, we need to acknowledge that in the past there has been a credibility gap between the education program made available to our children and youth and the real life roles in our society which they had to assume once they left the classrooms.[1]

Many students see a gap between educational experiences and their future life. This "gap" exists because too often educators fail to show relationships between curriculum and the practical application in the "real world."

> ...One of the critical overriding problems in education is the lack of relevance of existing curricula for the majority of our state's youth. A major factor causing irrelevancy is the failure to provide systematic experiences to help students make career decisions that are logical and sensible.[2]

Unemployed, underemployed, and unhappily employed people are a major concern to national leaders and educators. "Paradoxically, when educators are confronted with the question of unemployable people, they respond, 'They need more education.' The answer lies not with more education, but with the type of education a student receives."[3]

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[1] John W. Porter, Superintendent of Public Instruction, Michigan Department of Education. "Career Education." Michigan School Board Journal, January, 1973.

[2] Harry N. Drier, Jr. "Career Education." A paper distributed to Wisconsin educators. Madison, Wisc. Wisconsin State Department of Public Instruction, 1970.

[3] Dennis T. Torp. "Career Education and the Existing Curriculum." School Shop. April, 1973.

> ...Today we have high school graduates who are functionally illiterate and university graduates without either the prerequisites or the qualifications for living productively or creatively as professionals in our technological society. Education on all levels, but especially in the university seems to lack focus... furthermore, public education has really become elitest as indicated by the low value that seems to be placed upon the work ethic.[4]

In 1972 Dr. Sidney P. Marland stated:

> Currently about two and a half million young people a year leave high school or college, with or without degrees or diplomas and with no idea of what to do with their lives...I estimate that upwards of fifty percent of our young people now in school or college have no real goals toward which to aim, and that they have very little information or help for establishing these goals and pursuing them systematically.[5]

Career education can be the vehicle that will help alleviate some of this apprehension by enabling students to develop competencies essential to living and making a living. Students should leave school prepared to adapt to a dynamic and diversified society by accepting change and using their decision making skills. Through a sequential systematic approach, it is expected that students will be better prepared for living a life and earning a living.

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[4] W. P. Shofstall, Arizona Superintendent of Public Instruction. "Position Paper: Higher Education in Arizona." Phoenix: December 7, 1971.

[5] Sidney P. Marland. "Education for More Than One Career." World, July 18, 1972.

PHILOSOPHY

The school is perhaps the most appropriate agency for systematically preparing young people to enter the world of work. Warren Ziegler, Co-director of the Educational Policy Research Center at Syracuse University claims:

> Educational planning in this country is almost nonexistent. Compared to such countries as Japan, Sweden, and Norway, we are far behind. Education can only be studied within the context of the society it serves. Education "for what" and "for whom" are the questions that must be asked. The consequences of policy go beyond the school and affect all aspects of society, including work, leisure, politics, values and life styles.[1]

"Career Education can be the answer: a planned, systematic approach to help bridge the gap from school to the world of work. Career Education is education for living: preparing students for personal fulfillment and economic independence; for satisfactory assumption of their roles in a family unit, in the community, in some remunerative occupation; for exposure to avocational opportunities. To a large degree, a person's occupation determines his life style related to his family, his role in the community, and the way he spends his leisure time; consequently, it seems wise to relate educational experiences to occupations in order to make students aware of the vast array of available jobs."[2]

As a comprehensive program, there must be a systematically organized effort to coordinate instruction and integrate career education into the entire curriculum. This will aid students in understanding the relationship between educational experiences and their application to everyday life.

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[1] Warren L. Ziegler. "The Future As the Present." Update. Syracuse, N. Y. : Syracuse University, School of Education, fall, 1971.

[2] B. Carol Turner. "Career Education--Education for Living," Michigan Industrial Education Society, Inc., Journal, March, 1973.

PHASE I is the awareness level, self and career awareness; it begins in Kindergarten, because this is when we first assume the responsibility for the student.

> Through group interaction, the lower elementary student develops a positive self-concept and an awareness to the "real world" by relating to the home, the school, the neighborhood, and the community.[3]

The upper elementary students' experiences are broadened as occupational information is incorporated into the regular curriculum. Self awareness provides the individual with a way of assessing himself; he focuses in on his physical, intellectual, and emotional characteristics. Self assessment and career awareness is a continuous process throughout the individual's lifetime.

PHASE II is exploration and investigation of a wide range of occupations and provides opportunities to utilize planning and decision making skills. The junior high student develops an appreciation of, and wholesome attitudes toward, the world of work as he accepts assignments, thinks them through, and acts upon them.

> Students acquire skill in making intelligent decisions because they learn to anticipate outcomes, and respond appropriately. While they learn about people and jobs, they develop insight into their own potential, their own likes and dislikes.[4]

Exploring occupations, as well as using planning and decision making skills, are lifelong processes.

PHASE III is preparation for placement. In senior high school the student begins to focus on one occupational cluster that interests him. This may

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[3] B. Carol Turner. "Career Education--An Approach That Makes Sense," The Michigan Elementary Principal, November-December, 1972.

[4] B. Carol Turner. "Career Education--Education for Living," Michigan Industrial Education Society, Inc., Journal, March, 1973.

result in skill development for an entry level job, or intensive preparation for placement related to further training or additional schooling.

The "phases" incorporated into the career education philosophy complement Warren Consolidated Schools' "Philosophy of Education." This framework gives the student meaningful educational experiences. Through awareness, exploration, planning, preparation and placement, the student will be better prepared to satisfactorily assume his various roles in life.

## EXISTING K-ADULT AND CONTINUING EDUCATION PROGRAM

The system-wide career education program begins at the kindergarten level and extends through adult and continuing education; it is based on a systematic sequential approach. The phases (self and career awareness, exploration, preparation and placement) are continuously recycled depending on the individual's needs and wants. The "phases" overlap and are not distinct processes in educational pursuits.

> Typically, when an elementary school curriculum has provided a career awareness program, the junior high school program will provide for career exploration...The next step is a senior high school curriculum which provides the opportunity...to specialize in the development of particular skills. [1]

Career education permeates curriculum at all levels. The concepts are easily diffused into the existing curriculum by various methods. For example, the social studies transportation unit incorporates information about

> ...people and various occupations involved in the transportation industry. Relevancy is added by concurrently integrating transportation information into all subject areas. The role of science to land, water, and air transportation is limited only by the teacher's imagination. The mathematics class might be used to construct and compute calculations related to supporting the transportation industry. The student uses language arts skills to seek out information about people and jobs in the transportation industry. [2]

This interdisciplinary or correlated method proves to be quite effective in self-contained classrooms and in situations where team teaching is possible. Another infusion method is through single subject implementation. In social studies, students might discuss the impact of current social issues on their family life.

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[1] John A. Nitz, President, Warren Consolidated Schools' Board of Education. "The Pulse of Career Education: How Do You Know It's There?" Michigan School Board Journal, October, 1973.

[2] B. Carol Turner. "Career Education--An Approach That Makes Sense." The Michigan Elementary Principal, November-December, 1972.

> A math unit on the Pythagorean Theorem can be easily demonstrated by relating it to the construction of a house roof.[3]

Consequently, the student will understand the relationship between subject matter and the world of work. Whereas, another time the math teacher may relate all instruction to specific occupations that require a strong math background. In addition to these types of experiences, other opportunities are provided at all levels.

A seventh grade ten-week career education course, required of all students, gives the student an opportunity to reflect on elementary educational experiences. The emphasis is through individual development and establishes a practical motivating force for the student who wonders, "Where do I go from here and what good is school for me?"

In eighth grade the Galaxy Approach is an exploratory program in art, visual communications, energy and propulsion, materials and processes, business, graphics, and home economics:

> Clustering thousands of related job fields by knowledge, manipulative skills, principles, and products made it possible to produce an exploratory experience simulating the major facets of these numerous occupations. These broad groupings or similarities from the various job possibilities produced families or occupational clusters.
>
> Students are exposed to various occupational opportunities through exploratory, manipulative-centered experiences. These experiences are further explored using a limited problem-solving/decision-making approach.[4]

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[3] John A. Nitz, President, Warren Consolidated Schools' Board of Education. "The Pulse of Career Education: How Do You Know It's There?" Michigan School Board Journal, October, 1973.

[4] Dennis T. Torp, Administrative Assistant, Warren Consolidated Schools. "Career Education and the Existing Curriculum." School Shop, April, 1973.

Teachers point out that the usual stereotyping of male-female roles is not realistic in today's society. For example, boys are encouraged to take home economics and girls to select graphics. Avocational, as well as vocational, opportunities are investigated.

The ninth grade Contemporary Life Program focuses primarily on social problems, questions, issues, and values. The entire course is founded on the belief that relevancy, pupil participation in program development, and allowance for exploration of individual interest and abilities are pathfinders for the creation of meaningful learning experiences for students. Career exploration is an important part of the course and gives the student an opportunity to internalize these concepts as he explores occupations.

The awareness and exploration phases overlap into the preparation and placement phase that begins in senior high school. Teachers representing a cross section of all subject areas gear instruction toward preparing students to assume their life roles in a personally rewarding manner. Based on the individual's abilities, interests, and achievement, counselors advise students in the selection of courses.

Counselors and teachers assist individuals in mapping necessary and sequential steps to accomplish tentative career goals. The career goal may require development of saleable skills, placement in an entry-level job, or placement in training programs that require learning experiences beyond the high school level; this includes apprenticeship programs, vocational schools, business schools, community colleges, and colleges and universities.

Career days, career assemblies, guest speakers and field observations, all contribute to increasing the student's knowledge of occupations and workers'

life styles. Field observations may be either large group or individual experiences. Duration of observation varies depending on the student's needs and the job situation.

In some instances, field observations lead to exploratory work experiences. Students do not receive pay and are not considered employees of the organization. These experiences have proved to be highly rewarding for students, as well as workers on the job sites. Exploratory experiences aid students in their understanding of job situations; they have an opportunity to explore a variety of occupations and learn the interdependence of workers. Students learn the importance of developing good human relations skills.

Through the cooperative work experience program the student becomes a part-time employee of the organization and gains firsthand knowledge of an occupational area that interests him. Often the part-time work station develops into permanent employment when the student becomes available for full-time work. The cooperative work experience program is considered vocational education.

Existing vocational education programs include: Office Occupations, Distributive Education, Health Occupations, Home Economics (Commercial Foods, Child Care, Clothing Management), and Trade and Industry (Auto Mechanics, Blueprint Reading, Business Machine Repair, Commercial Art, Drafting, Graphic Arts, Horology, Metal Working, Radio Repair, Radio Station, Television Repair, Welding, Wood Working).

Each student entering the Adult and Continuing Education Program has unique needs, desires, and background. Consequently, after informal counseling sessions, each person is given a custom-made program designed in such a way that he can accomplish his goals. A logical conclusion is to exit the program when the

student attains his individual goals, whether these goals were improvement of communication or computational skills, participation in enrichment classes to enhance leisure time activities, development of vocational skills, high school completion, job placement, or U. S. A. citizenship.

Whether the phase is self assessment, career awareness and exploration, or preparation and placement, the long range goal is still the same; economic independence and personal satisfaction for the individual as he assumes his various roles in life.

## BACKGROUND AND PROCEDURES

In the initial stages the Project Staff, Central Administrators, and Building Principals planned strategies for involvement. The program got off the ground by surveying personnel to determine their interest in the career education concept. A sequence of steps followed:

1. Survey responses were followed up by inviting personnel to participate in orientation meetings.

2. Classroom teachers assisted Project Staff in developing career education student goals and objectives. The following student goals were developed to complement the district's existing curriculum:

   a. The student will increase his awareness of the wide range of options available in the world of work.

   b. The student will understand the relationship between various subject areas and their application to people and occupations in the fifteen occupational clusters as identified by the U. S. Office of Education.

   c. The student will become more aware of the interrelatedness and interdependence of people and occupations as he develops insight into the job environment, the work performed, the qualifications necessary, and the contributions of workers to society. (Refer to Appendix A for K-9 Student Goals and Objectives.)

3. The Project Staff developed the following Teacher Performance Objectives with evaluation based on observable behavior and/or product:

   Given a ten-week term, the teacher will demonstrate his/her awareness to, and an acceptance of, the career education concept by:

   a. Incorporating career education concepts into the teaching of general education skills.

   b. Using surveys to enlist and involve members of the parent and business community in an ongoing process of curriculum enrichment.

   c. Participating in in-service workshops where he/she assists other teachers while sharing ideas and methods, as well as mutual concerns and problems.

d. Accepting visitors into his/her classroom and sharing with them elements of the Project and methods of implementing the concepts.

e. Giving a written evaluation of a minimum of one media resource related to the instructional unit being implemented. (Appendix B is the Media Evaluation Form.)

f. Working individually, or as a team, develop, implement, revise, and evaluate for classroom use, career materials according to Project guidelines. (See "Guidelines for Development of Instructional Materials" on next page.)

4. Based on teacher interest, Project Staff identified classroom teachers to serve as demonstration teachers.

5. Demonstration teachers participated in workshops where they developed career-oriented, activity-centered instructional materials to be infused into the existing curriculum. (See Examples of Instructional Units of Study in Appendices.)

6. Experimental implementation and pilot testing by developers and non-developers ran concurrently with the writing of materials.

7. Project Staff met with district personnel, parent groups, and civic organizations to enlist their support in the ongoing process of curriculum enrichment. (See Appendices C, D, E, F, G.)

8. Materials were later field tested in classrooms by new teachers; teachers continuously evaluated materials, shared results, and made recommendations for improvement. During the field testing of instructional materials, accountability was built into the program by using a monitoring system based on the Michigan Department of Education's Accountability Model. Each time revisions were made, materials were disseminated to new teachers and the cycle started again.

9. District personnel shared materials and experiences with other school districts. Staff members gave numerous presentations throughout the state and assisted other districts in conducting workshops where teachers developed materials. Periodically, representatives from various districts visited the Project. (Appendix H is Request for Visitation.)

## GUIDELINES FOR DEVELOPMENT OF INSTRUCTIONAL MATERIALS

1. The diffusion of career education concepts into the existing program should predominate at all instructional levels.

2. Behavioral language must be used in writing student performance objectives.

3. Pre and post tests included in the materials will be used to determine student's achievement.

4. Instructional materials must be designed for individual instruction and guidance.

5. Materials should be geared toward helping students understand that workers are human beings who have other roles in life besides their occupational role, e.g., citizen, family member.

6. Students should have opportunities to realize that the usual stereotyping of male-female work roles is not realistic in today's society.

7. Duration of a given unit can range from one to ten weeks, depending on student interest and teacher's method of presentation.

8. Instructional units of study must:

   a. Include parental participation in many areas (e.g., assisting individuals or small groups in the classroom; talking to classes about their work, hobbies, and travel; assisting with transportation; arranging for field observations and occupational role models; helping collect materials; making suggestions and recommendations related to objectives and budgeting.)

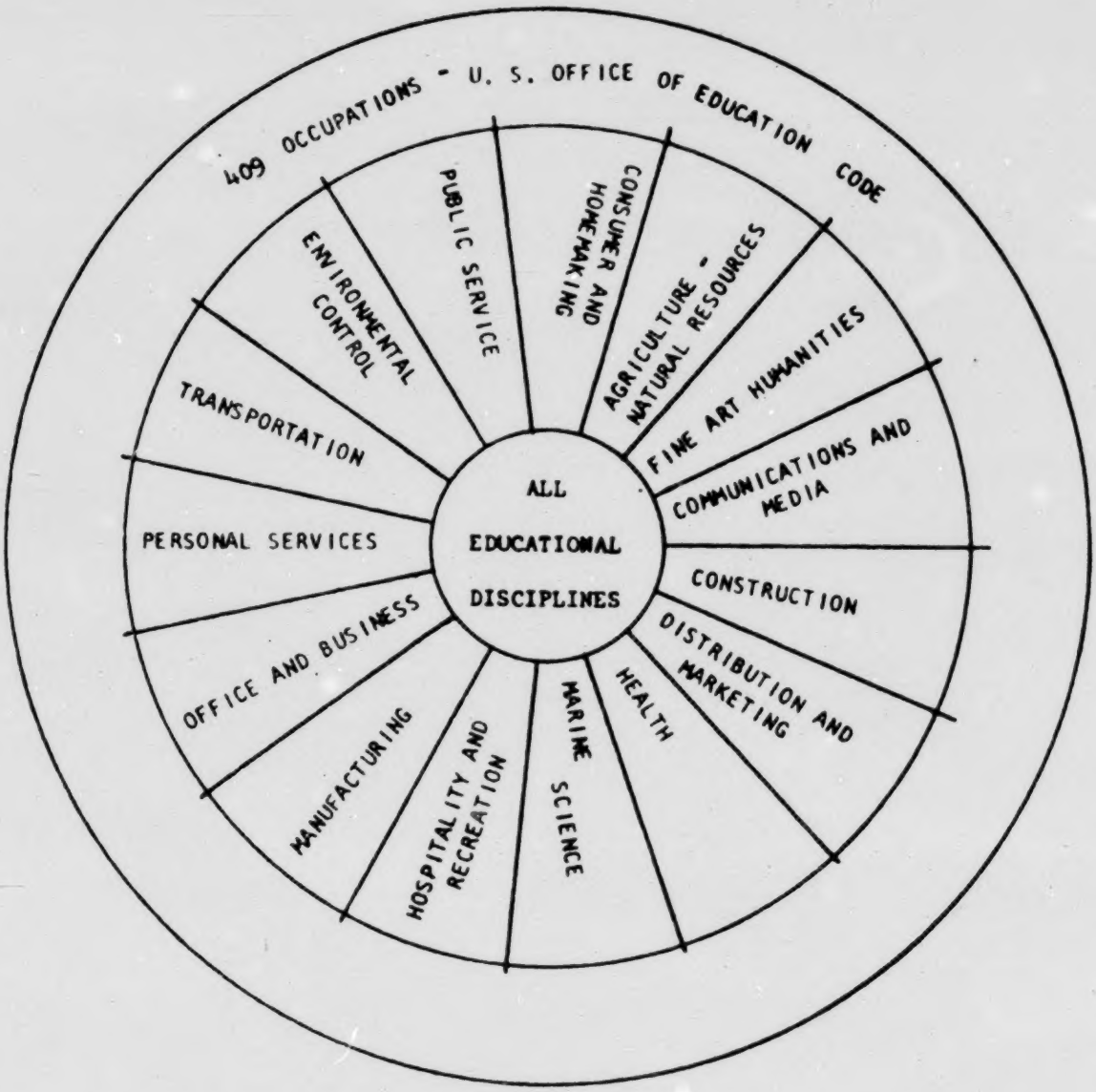
   b. Require hands-on, or manipulative, activities to help support and clarify abstract experiences.

   c. Use role playing to help students develop insight into lifelike situations and provide opportunities for self expression.

   d. Utilize resource people and occupational role models to motivate students when they talk about their work, life style, hobbies, and travel.

   e. Include field observations to job settings where students are able to observe the job environment and interact with workers.

BREAKDOWN OF OCCUPATIONAL CLUSTERS




In developing career education materials in Warren Consolidated Schools, we have used the fifteen occupational clusters as identified by the United States Office of Education. Occupational clusters are used because they do not change; whereas, occupations change rapidly.

## PROCEDURES FOR DEVELOPMENT AND IMPLEMENTATION

Instructional materials were developed, implemented, revised, and evaluated by classroom teachers with the assistance and cooperation of the Care Staff, Building Administrators, Media Specialists, Counselors, and Curriculum Consultants.

Three types of instructional units of study were developed. One format is designed for implementation with a correlated, or interdisciplinary, approach. Another format is used, for implementation in a single subject area. The third type of instructional unit is a ten-week course for seventh grade students.

The interdisciplinary approach is especially effective in the self-contained classroom or in situations where team teaching is practical. This format was used extensively by elementary teachers.

Elementary Career Development Specialists, Miss Audrey Crepeau and Mrs. Mary Treadway, assisted classroom teachers in the district's 34 elementary schools. Miss Crepeau assisted upper elementary teachers, whereas Mrs. Treadway worked with lower elementary teachers in developing and revising instructional units of study. "Family Members as Producers and Consumers" and "Occupations in Natural Resources" are examples of instructional units utilizing the correlated format; both are included in the Appendices.

The interdisciplinary, or correlated approach, was also used in several junior high schools during the first two years of the program. Mrs. B. Carol Turner, Project Coordinator, and Mr. Terry Turk, Secondary Career Development Specialist, assisted teachers at Carter, Carleton, Grissom, and Butcher Junior High Schools in developing and implementing materials.

The single discipline instructional unit format was used heavily in the junior high schools. A cross section of teachers, representing all subject areas in the district's nine junior high schools, developed and implemented instructional materials in their specific subject areas. Mr. Michael Shibler and Mr. Terry Turk, Secondary Career Development Specialists, assisted the teachers. "Occupations in the Stock Market" is an example of a single discipline instructional unit; it is included in the Appendices.

The basic structure for the ten-week seventh grade course centers around four interrelated themes: self, education, economics, and occupations. The emphasis is on individual development and awareness, rather than occupational exploration or selection.

Beginning with the '73-'74 school year, the course was a requirement for all seventh grade students in the district's nine junior high schools. Melby Junior High School's eighth grade students also had an opportunity to take the course. Mr. Turk worked closely with teachers of the course, especially where revisions were concerned.

Mr. Turk served as a consultant for the social studies committee that revised and expanded the career exploration portion of the ninth grade Contemporary Life Course.

The next section contains capsule reports of all instructional materials developed and implemented.

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CAPSULE REPORTS OF K-9 INSTRUCTIONAL UNITS

Elementary level interdisciplinary, or correlated, instructional units of study:

PRIMARY LEVEL

FAMILY MEMBERS AS PRODUCERS AND CONSUMERS -- This unit acquaints the young child with the world of work as it relates to his family. He becomes aware of the occupations of the working members of his household, and thus cognizant of their roles as producers and consumers. He relates the roles of members of his family to basic economics as he determines their contribution to society in terms of producing goods or rendering services.

POLICE AND FIRE DEPARTMENT WORKERS -- The unit familiarizes the child with public service personnel who provide protection. This unit also includes activities related to fire prevention and safety.

SCHOOL WORKERS -- Through this unit, the young child becomes familiar with these school workers: teacher, principal, secretary, media specialist or librarian, nurse, cafeteria staff, and bus driver. As the child sees these workers in their job settings explaining their jobs, he gains new insight into the operation of, and personnel within, his school. The unit contains many experiences to strengthen basic Language Arts skills.

SPACE-SCIENCE WORKERS -- This unit introduces students to the many workers involved in the space program such as: astronaut, mechanic, mission controller, chemist, rocket builders, and launchers. The unit provides activities to capture the interest and imagination of young children and at the same time increase their reading, writing, listening, and thinking skills.

BAKERY WORKERS -- This unit enables young children to gain actual work experience because an essential part of the unit is the establishment and operation of a bakery. Included in the unit are many Language Arts activities; math concepts become more relevant when children measure ingredients and learn to tell time. Although the unit was written for first grade, it can be adapted to any primary grade.

PIONEER AND PRESENT-DAY WORKERS WHO PROVIDE FOOD, CLOTHING, AND SHELTER -- During the fall of the year, it is appropriate to study about the early settlers in our country. This leads into studying how pioneers provided for their basic needs of food, clothing, and shelter. Life in pioneer days is compared to life roles in today's families as children become familiar with today's workers who provide food, clothing, and homes. Activities in Language Arts and Social Studies are incorporated throughout the unit.

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SECOND-THIRD GRADE LEVELS

OCCUPATIONS IN MEDICINE -- This unit was designed to provide students with a knowledge of the various jobs in the medical field. Students have the opportunity to talk to medical personnel and see them in their occupational environment in the hospital, doctor's office, or clinic. This unit includes activities in Language Arts, Science, Mathematics, and Social Studies, related to medical workers. Materials were constructed for use in third grade but are appropriate for other elementary grades.

WORKERS IN THE BUILDING TRADES -- The purpose of this unit is to acquaint students with the people who build and maintain homes. Students become aware of such workers as the architect, electrician, plumber, and roofer. Visiting a construction site enables the student to better understand how his own home was built. Activities from the subject areas of Language Arts, Science, Mathematics, Social Studies, and Art are included. The unit is suggested for use in third grade.

OCCUPATIONS IN RETAILING AND BANKING -- Through this unit, the student becomes familiar with the people who work in stores and banks. The unit's activities for the students include the formation and operation of a store. The students learn about banks by organizing their own bank and determining what services it should provide. Activities geared to using and increasing skills in Mathematics, Language Arts, and Social Studies are an integral part of the unit. The unit was constructed for use in third grade but can be adapted to any elementary grade.

CAREERS IN THE ZOO -- This unit enables third graders to become aware of the zoo as a recreational facility, and also the workers necessary to maintain a zoo. Besides stressing zoo workers, this unit includes a study of zoo animals and their classifications. In addition to these Science activities, subject areas of Language Arts, Social Studies, Mathematics, Music, and Art are correlated. Having a zoo in the classroom is a culminating activity.

AIR TRANSPORTATION WORKERS -- This unit acquaints the student with occupations related to air transportation, today and in the future. This unit contains Language Arts, Social Studies, Science, Mathematics, and Music activities appropriate for second graders.

RESTAURANT OCCUPATIONS -- The unit familiarizes students with restaurant workers. Children plan and establish their own restaurant, providing an opportunity for them to realize what is involved in operating a restaurant. Integrated into the unit theme are activities related to all subject areas. The unit was constructed for use in second grade, but can be adapted to other elementary grades.

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GRADE 4 UNITS

OCCUPATIONS IN CLOTHING -- These objectives and activities related to occupations in the clothing industry are broad enough to interest both boys and girls. Tailoring is emphasized as the student follows the steps in making a jacket. In the Social Studies program, map skills are used as the student identifies areas in the world where raw materials for textiles are produced.

WORKERS IN THE BOOK PUBLISHING INDUSTRY -- This unit focuses on the workers necessary, and the skills required, to publish books. The major activity involves the writing of stories that may be bound into a class book. It may be used in conjunction with a Young Authors' Club.

ATHLETIC-RELATED OCCUPATIONS -- Opportunities to develop an awareness of the contribution of sports to our culture are provided. Focus is placed on both male and female roles. In addition to professional athletes, the activities stress many jobs related to sports.

WORKERS IN FARMING OCCUPATIONS -- In addition to studying the workers on a farm, the city student is introduced to new or unfamiliar ideas involved in the type of farming and the equipment used today. This unit can be correlated with the fourth grade Science and Social Science curriculum.

GRADE 5 UNITS

WORKERS IN THE NEWSPAPER INDUSTRY -- The unit helps the student become aware of the occupations and work involved in publishing a newspaper. The highlight of the unit is the planning of a class newspaper. The major focus of the unit is on writing and analyzing stories on the basis of Who? What? When? Where? Why?

OCCUPATIONS IN TRANSPORTATION -- Many objectives and activities in the unit center around a study of workers involved in all three areas of transportation (land, water, air). However, provisions are made in the activities for selecting any one of the three areas. Emphasis is placed on reading and interpreting map symbols and developing practice in following routes on road maps.

WORKERS IN NATURAL RESOURCES -- Fifteen natural resource workers are presented in the unit with a major emphasis on the forester. Since many of the objectives and student activities center around nature study, the unit lends itself to the outdoor camping program.

THEATRICAL CAREERS -- This unit develops verbal and physical expression in students as they role play workers involved in the theater. It is a happy learning experience for outgoing students as well as a meaningful incentive for the shy child.

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GRADE 6 UNITS

WORKERS IN THE FIFTEEN OCCUPATIONAL CLUSTERS -- The fifteen occupational clusters as identified by the U. S. Office of Education presents a broad overall view of workers. A major activity provides an opportunity for an in-depth study of one occupation selected by the student. The design of this unit allows the instructor to teach occupations in correlation with Language Arts and/or Social Studies.

OCCUPATIONS IN FINANCE -- The performance objectives and student activities highlight workers involved in banking. Minor emphasis is placed on insurance and real estate workers, since these people are also involved in financing. The unit may be taught in the context of the disciplines of Language Arts and/or Mathematics.

TELEVISION OCCUPATIONS -- The student learns about dramatics and public speaking while simultaneously exploring careers pertinent to television. The foremost activity suggests the production of a play which may be video taped. The design of this unit allows for correlation with the sixth grade Language Arts program.

OCCUPATIONS IN RETAIL MERCHANDISING -- This unit presents the familiar role of a salesperson; it also introduces many occupations "behind the scenes." The major activity in this study is setting up and operating a classroom store.

TEN-WEEK SEVENTH GRADE COURSE

Various strategies are used to emphasize the significance of the interrelated themes:

1. Self awareness enables the individual to plan and pursue his life goals realistically. Self awareness is defined as a consciousness of one's own aspirations; interests; attitudes; values; and physical, intellectual, and emotional capabilities and limitations.

2. Occupational awareness provides the individual with a broad experimental base for rational decision making relative to career planning.

3. Educational awareness enables the individual to perceive the relationships between educational experiences and life roles.

4. Economic awareness provides the individual with insight into the implications of supply and demand as related to accomplishing self-satisfying goals.

Eleven student competencies have been developed around the four themes:

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VOCATION/AVOCATION -- Students develop an understanding of the role vocations and avocations play in their lives. They see the relationship between hobbies and work and realize that one person's hobby can be another's occupation. While learning about individual differences, students discover all people do not enjoy doing the same things in their leisure time. This realization of individual differences is used as a basis for Competency II, Self Awareness.

SELF AWARENESS -- Self awareness includes activities which help students learn how to make responsible decisions. Values clarification strategies focus on helping individuals examine the values they hold as well as the various alternatives available to them. Students learn how their values influence choices; they focus on their individual interests and have an opportunity to informally weigh their capabilities with respect to a potential career.

CAREER CLUSTERS -- Students learn categorizing of occupations according to similarities. They understand that clusters mean similarities in occupations and that this is an excellent way of identifying commonalities in careers. Students engage in activities that help them learn the hierarchy of jobs within the various job families and research jobs that are of interest to them.

INTERDEPENDENCE OF OCCUPATIONS -- Activities are designed to help students develop an understanding of the interdependence among occupations. They learn how one worker depends on another.

DECISION MAKING SKILLS - Students utilize a number of decision making techniques which ultimately lead to making decisions about their eighth grade course selections, with implications for the grades that follow. The techniques used require students to consider alternatives, expected outcomes, and then make decisions. They realize decisions are based on personal values. Students practice setting short term goals and are able to differentiate between realistic and unrealistic goals.

JOB MARKETS -- Students become aware of five factors that influence job markets: governmental influence; educational restrictions; geographic locations; economic factors; and technology. Students examine projected job markets with regard to employment opportunities.

STRATIFICATION IN THE WORLD OF WORK -- Students begin to understand how responsibilities and types of jobs differ within an occupational organization. An example is the range of tasks and responsibilities in a school, from custodian to principal. Stratification within various job clusters is examined.

MOBILITY WITHIN THE JOB -- A number of activities help students understand the potential of mobility within an occupational cluster. They also identify possible reasons for mobility. For example, an increase in work skills may result in promotions; whereas, automation may cause some workers to lose their jobs and require that other workers be retrained for new jobs.

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PERSONAL AND ECONOMIC FULFILLMENT -- Occupations are examined and ranked according to students' perception of the occupations in terms of personal fulfillment, economic advantages, and social status. Students recognize how economic, social status, and personal fulfillment rewards can be obtained through job performance. Students make personal decisions regarding how they feel about the risk involved, working conditions, financial reward, prestige, desirability, and demand. They rate jobs as being professional, skilled, semi-skilled, and unskilled.

AVAILABILITY OF OCCUPATIONAL INFORMATION -- Students learn how to determine what jobs are available and the knowledge and skills required for various occupations. They become aware of want ads, counseling services in and out of schools, family help, etc. They enter the "real world" by using interviewing and surveying techniques. Classroom guests are invited to represent work clusters or avocational pursuits.

PROCESS OF SECURING A JOB -- Students learn about child labor laws governing their employment, are made aware of the need and the process for obtaining a working permit, and the procedures involved in securing a job. Social security is discussed and the method of obtaining a social security number is explained. Students become familiar with job applications and how to complete them.

The following are capsule reports of the single discipline instructional units developed for use in the junior high schools:

SOCIAL STUDIES UNITS

OCCUPATIONS IN THE STOCK MARKET -- The unit is designed for eighth grade students enrolled in an American History class. The infusion of the unit into the Social Studies curriculum provides the student with an opportunity to study the operations and functions of the stock market as he learns about careers in the field.

LAW ENFORCEMENT OCCUPATIONS -- This unit is developed for ninth grade students in the Contemporary Life class. The unit offers the student the opportunity to study the social causes and effects of crime concurrently with occupations.

WATER CARGO TRANSPORTATION OCCUPATIONS -- These materials are designed for eighth grade students enrolled in a U. S. Affairs class. The unit provides the student with an opportunity to study the early and modern water transportation of cargo with careers germane to water transportation.

SOCIAL WORK OCCUPATIONS -- This unit is developed for ninth grade students in the Contemporary Life class. The implementation of the unit within the Contemporary Life curriculum offers the student the opportunity to concomitantly study the ramifications of poverty and efforts to alleviate this problem while learning about careers related to social work.

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RAILROAD TRANSPORTATION OPERATIONS -- The unit is designed for eighth grade students in the American History class. It provides the student with the opportunity to concurrently study the past and present developments in railroad transportation with careers germane to passenger and freight transit systems.

LANGUAGE ARTS UNITS

SPEECH SKILLS IN SALES OCCUPATIONS -- This unit is developed for students enrolled in a Language Arts class. It offers the student a unique method for studying public speaking, visual demonstration and communicative persuasion, while simultaneously exploring careers germane to sales.

ADVERTISING OCCUPATIONS -- The unit is developed for a ninth grade Language Arts class. It provides the student with a viable approach to studying various advertising techniques employed to disseminate information, while concurrently exploring careers related to advertising.

FOREIGN LANGUAGE RELATED OCCUPATIONS -- This unit is designed for students enrolled in a Foreign Language class. The implementation of the unit within the foreign language curriculum provides the student with the opportunity to study the various customs, industries, people and language(s) of a country, while concurrently exploring careers requiring a foreign language background.

SCIENCE UNITS

ENERGY RESOURCES -- This unit is developed for a seventh grade class. It provides the student with the knowledge necessary to appreciate the importance of effectively utilizing our natural resources for energy consumption while exploring careers germane to the petroleum and allied industries.

ENVIRONMENTAL HEALTH SERVICES -- The unit is designed for a seventh grade general science class. It is recommended that the unit be implemented in conjunction with the seventh grade science text, Man and His Environment; specifically, the section entitled "Man Effects the Environment." The unit emphasizes the importance of environmental control, as well as specific careers relevant to environmental health services.

MATHEMATICS UNITS

COMMERCIAL BANKING OCCUPATIONS -- These materials are developed for general or basic mathematics classes. Infusion of the unit in the ongoing math curriculum provides the student with a viable method of learning basic mathematical skills while concurrently studying careers relevant to banking.

OCCUPATIONS IN INDUSTRY -- The unit is designed for a general mathematics class. The infusion of the unit within the math curriculum offers the student a unique approach to learning basic mathematical skills while concurrently exploring careers associated with industry.

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APPLIED ARTS UNITS

OCCUPATIONS IN RETAILING -- This unit is specifically developed for ninth grade students enrolled in the Exploratory Business class. The unit offers the student a viable approach to studying the many facets of retailing while he is exploring various careers related to Marketing and Distribution. The procedures involved in operating a student bookstore permeate the unit, allowing the student to gain realistic experiences in retailing.

CLERICAL OCCUPATIONS -- The unit is designed for students enrolled in a Personal Typing class. The infusion of the unit within the business curriculum provides the student with a practical approach to learning the skills involved in the manipulation of the typewriter, while concurrently studying the responsibilities and duties of personnel in the clerical field.

ARCHITECTURAL PERSONNEL -- The materials are developed for students enrolled in a Visual Communications class. The infusion of the unit within the industrial arts curriculum provides the student with a unique method for studying the various components of drafting, while concomitantly exploring careers germane to architecture.

NINTH GRADE CONTEMPORARY LIFE COURSE

The concepts and objectives for the forty-week course relate to self awareness, social and institutional awareness, and social responsibility. Career exploration is an important portion of the course. The duration of the career exploration segment varies from five to fifteen weeks, depending on student interest and teacher's approach to implementation. The students explore careers in general; they participate in activities related to obtaining employment, job applications (resumes, recommendations), interviews, classified advertisements, social security cards and work permits. Self assessment and decision making are utilized with regard to tentative career selection and planning. The counselors explain how to interpret various test scores and discuss high school course selection as it pertains to career preparation.

## EVALUATION

As has been mentioned previously in this report, continual evaluation procedures are conducted at various stages of planning, development, and implementation. Such efforts assure delivery that is consistent with the needs of the students. This also ensures that the program operates within established guidelines. The same philosophy of evaluation was applied by the school district during the "Project assessment" stage.

An external assessment was conducted in cooperation with the Michigan Department of Education and was initiated during the final pilot year, 1973-1974. Essentially the design of the Michigan Department of Education's study was based upon the specific goals and objectives of the program and was responsive to the unique delivery by instructional personnel. This ensured reliability of instrumentation and compilation of data. Since program decisions and future direction were to be based on evaluation results, it was necessary to develop an evaluation system reflective of, and consistent with, the delivery of instructional staffing.

The first step in the process was defining precisely those general program goals that would affect the intent and delivery of the program. Secondly, a process was then developed to identify the common instructional objectives in each curriculum unit that related to the program goals. These served as a base for developing reliable student measures. A third step provided instructional staff an opportunity to react, through a rating system, to the goals and objectives. From the teacher's reactions, the specific objectives were prioritized respective to level of emphasis in the classroom. Finally, the evaluator and Project staff served as a "validation committee" in developing

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instrumentation. The final product, a measure to assess student learning in various facets of career development, was then piloted with samples of students to establish areas of difficulty or concern.

Although the final research has not been published by the state at the time of this writing, sufficient procedures have been established to assure a reliable indication of program accomplishment. For specific and detailed information regarding the evaluation of the Project, the reader is referred to the Michigan Department of Education report entitled "A Comprehensive Study of Effects of Career Development Curriculum on Students in Warren Consolidated Schools, 1973-74," submitted by A. L. Simpson in cooperation with Project CARE Staff.

# Appendix A

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| GOALS | PHASES | STUDENT OBJECTIVES K-3 | STUDENT OBJECTIVES 4-6 | STUDENT OBJECTIVES 7-9 |
|---|---|---|---|---|
| The student will increase his awareness of the wide range of options available in the world of work. | Self Awareness and Assessment | The student will be able to demonstrate his uniqueness as a person by expressing his likes or dislikes related to performing certain chores in the home, school, and community. | The student will demonstrate his knowledge of self capabilities (physically, intellectually, and emotionally) by choosing to participate in those occupationally-oriented activities that give him personal satisfaction.<br><br>The student will be able to explain his interests for various occupations, based on his likes and dislikes, and tell why he feels favorably or unfavorably disposed toward certain jobs. | The student will investigate his own values, relate them to others, and apply his findings toward exploring career possibilities.<br><br>The student will inventory his perspective of school, daily schedule, personal habits and personal attitudes and relate these to occupational characteristics. |
| | Career Awareness and Exploration | The student will identify and describe the occupations of the members of his family, his school and his community. | The student will investigate occupational interest areas and present information related to various roles the worker exemplifies in the family, the community, and avocational areas. | The student will understand the vocational and avocational implications of a number of occupational interest areas.<br><br>The student will further explore various occupational areas that are of some interest to him.<br><br>The student will identify those occupations which have similar characteristics. |
| | Planning and Decision Making | The student will be able to explain why a particular occupation interests him. | The student will identify an occupational interest area and give reasons for his choice.<br><br>The student will demonstrate a recognition of the importance of decision making abilities as they apply to career goals. | The student will better understand the decision making process and apply it to career-oriented activities. |
| The student will understand the relationship between various subject areas and their application to people and occupations in the fifteen occupational clusters as identified by the U. S. Office of Education. | Self Awareness and Assessment | The student will apply knowledge gained in subject areas (e.g., skills) to an area of interest to him. | The student will use various skills to learn about occupations which relate to his interests and abilities. | The student will investigate his own educational values, relate them to others, and apply his findings toward exploring career possibilities. |
| | Career Awareness and Exploration | The student will understand the importance of the mastery of communication, computation and reasoning skills used in various occupations. | The student will identify the academic skills used by specific workers. | The student will see a relationship between subject areas and occupations.<br><br>The student will be able to identify ways in which career information may be obtained within a school and demonstrate competency in the use of each. |
| | Planning and Decision Making | The student will understand that his educational experiences form a systematic process which is related to real life. | The student will decide which academic skills are needed to perform specific jobs. | The student will select courses for hypothetical persons and then for himself for the following year.<br><br>The student will select courses for hypothetical persons based on an appraisal of that person. |
| The student will become more aware of the interrelatedness and interdependence of people and occupations as he develops insight into the job environment, the work performed, the qualifications necessary, and the contributions of workers to society. | Self Awareness and Assessment | The student will be able to discuss his interests about participating in activities pertaining to the home, school, and community.<br><br>The student will demonstrate his ability to assume gradually increasing responsibilities associated with various roles in the home, school, and community.<br><br>The student will make value judgments to decide on alternatives that will lead to satisfactory solutions to problems involving life situations about the home, school, and community. | The student will be able to express his attitues and values about work and how people's values and attitudes affect the way they do their work. | The student will explore a galaxy of career and consumer simulated experiences, and identify those which are of interest to him.<br><br>The student will investigate the varied roles of leader-subordinate relationships of various occupational areas of interest to him.<br><br>The student will see the relationship between his interests and hobbies and obtainable career opportunities. |
| | Career Awareness and Exploration | The student will understand that different occupations require the development of different skills.<br><br>The student will show how the tasks he performs in the home, school, and community relate to actual occupations.<br><br>The student will describe the work performed by various workers in his environment (family, school, community).<br><br>The student will be able to distinguish between workers who produce goods and those who render services.<br><br>The student will identify equipment, tools, and machinery associated with (community) workers. | The student will demonstrate his insight into the job environment by identifying the equipment used in the job.<br><br>The student will become aware of how one occupation is related to and depends on other occupations. | The student will become aware of the dependency each worker has on other workers. |
| | Planning and Decision Making | The student will apply problem-solving techniques to simulated occupational situations.<br><br>The student will display competency at working independently and as a member of a group. | The student will make decisions relevant to his personal needs that are satisfied by many people in various occupations.<br><br>The student will understand how his decisions affect others and will select the alternative that best suits the situation.<br><br>The student will analyze jobs in relation to dignity, self-fulfillment, self-confidence, economic rewards, and the interdependence with other jobs. | The student will become aware of various factors which will influence future job markets. |

# Appendix B

WARREN CONSOLIDATED SCHOOLS

MEDIA EVALUATION FORM

1. Suitable for what grade level?

| | | |
|---|---|---|
| Lower Elementary: | Kdg., 1, 2, 3 | _____ |
| Upper Elementary: | Gr. 4, 5, 6 | _____ |
| Junior High: | Gr. 7, 8, 9 | _____ |
| Senior High: | Gr. 10, 11, 12 | _____ |
| Adult and Continuing Education | | _____ |

2. For what job cluster is it best suited?

(1) Construction
(2) Manufacturing
(3) Transportation
(4) Agri-Business and Natural Resources
(5) Marine
(6) Environmental
(7) Business & Office
(8) Marketing & Distribution
(9) Communications & Media
(10) Hospitality & Recreation
(11) Personal Service
(12) Public Service
(13) Health
(14) Consumer & Homemaking
(15) Fine Arts & Humanities

3. Does it help the student develop the concepts of

a. career awareness?
b. self awareness?
c. importance of each individual in the family, school, community, and in chosen career?
d. decision making?
e. economic awareness?
f. skill awareness?
g. employability skills?
h. educational awareness?

4. For what subject is it most useful?

a. Language Arts _____
b. Social Studies _____
c. Science _____
d. Math. _____
e. Health _____
f. _____

Title of Series _____

Individual Title _____

Producer _____

Address of Producer _____

Price _____

(First Page of Two Pages)

TYPE OF MEDIA

1. Record - How long? _____ Size? _____

2. Tape - How long? _____

3. Cassette - How long? _____

4. Filmstrip - How many frames? _____ Color? _____

   Black and white? _____ How long? _____

5. Film - 16 mm.? _____ 8 mm.? _____ Color? _____

   Black and white? _____ How long? _____

6. Super 8 film - Black & white? _____ Color? _____ How long? _____

7. Pictures - How many in package? _____ Explanatory notes? _____

   Size? _____ Color? _____ Black & white? _____

8. Transparency - How many frames? _____ Black and white? _____

   Color? _____

Is it worth the money?

Is it the best media for the concept?

Do you know another media that would serve the same purpose as well or better? Please note.

_____

_____

_____

_____

Mrs. Marian Trainor, Media Specialist
South Elementary

(Second Page of Two Pages)

# Appendix C

Promotion--Orientation--Public Relations

Counselors should be involved in orienting students and their parents to the basic philosophy of career education. This can be accomplished through the classroom, newsletters, PTA, or Citizen's Advisory Committees.

Resource Person--Media--Materials

Counselors can direct teachers and students to the resources available in the building on career education, i.e., pamphlets, occupational kits, filmstrips, the D. O. T., etc., and explain how to use these materials.

Facilitator for Media and Community Resources

Requests for occupational role models, field observations, and media could be channeled through the counseling office. Counselors should meet the occupational role models and participate in field trips in order to be familiar with ongoing resources. The counselor should be kept informed on all facets of implementation.

Planning and Follow-Up Sessions

Counselors should be present at all planning and follow-up sessions. They will then be able to offer suggestions with respect to occupational role models, field trips, and other resources. They may also offer ideas on activities and revisions to meet the objectives of instructional units.

Communication Link

Counselors may be the direct contact between buildings and within the building to respond to the teachers' concerns and immediate needs relative to obtaining information and funneling concerns. New career education materials can be disseminated to teachers through the counselors.

Coordination

Coordination of the team approach is important; counselors should be aware of scheduling difficulties and offer suggestions to help overcome these problems. Counselors should also be aware of ongoing activities in individual classrooms and assist in coordinating activities. The entire staff should be aware of activities taking place in career education in order to stimulate interest and involve other staff members.

Feedback and Information

Counselors should provide teachers with positive feedback, not only in correlating the program, but by keeping teachers up-to-date on happenings in other classrooms and subject areas; this would give vital support to the program.

Evaluation

Counselors should be involved in evaluating the program to see if objectives are being met; this would require analyzing pre-post tests and making recommendations.

# Appendix D

Personnel of Warren Consolidated Schools: OUR STUDENTS NEED YOUR HELP!

The Career Education program at this school gives students a chance to assess their strengths, limitations, interests, personality, and aptitudes with respect to understanding themselves better in relation to career possibilities. The students will also increase their decision making skills and apply them in selecting tentative 8th and 9th grade classes. In addition to this, they will become acquainted with a variety of careers through the use of career resource personnel.

We hope that you will become actively involved. With your help, the program will be much more meaningful and successful.

If you are interested in providing more meaningful experiences for students, please respond to the following questions.

Name _____

Courses Taught _____

1. Please list past working experiences other than those in education.

2. Would you agree to give a presentation concerning any of the above experiences?

   Yes _____ No _____

3. Would your husband/wife agree to present his/her past or present occupation?

   Yes _____ No _____ Not Applicable _____

   If yes, please state:

   Name _____

   Occupation _____

   Time available _____

4. So that students may become more aware of course options, would you be willing to have your class observed by a student for one hour?

   Yes _____ No _____

Please return this survey to _____.

Thank you.

# Appendix E

WARREN CONSOLIDATED SCHOOLS

# PARENTS

Students at this junior

high school need you

to help them explore the

# World of Work

---

Name: (father) _____ (mother) _____

Telephone: (home) _____ (business) _____

Father's Occupation: _____

Mother's Occupation: _____

Other Occupational Experiences: _____

---

Would it be possible for you to come to school to talk to the Career Awareness class about your occupational experiences?

_____yes _____no

The Career Awareness class meets Monday through Friday from _____ to _____. This course will terminate on _____.
(date)

# Appendix F

WARREN CONSOLIDATED SCHOOLS
Project "Care"
(Career Awareness through Realistic Experiences)
RESOURCE SURVEY

Child's Name _____ School _____

Date _____ Telephone _____

| Names of Adults in Home | Occupations |
|---|---|
| _____ | _____ |
| _____ | _____ |

Would you be willing to come to school and talk to students about your present or past

Occupations _____

Hobbies _____

Talents _____

Travels _____

Do you have a preference related to the size of the group?

Up to 30 _____ Up to 100 _____ Large Assemblies _____

If you are willing to speak to your child's class, would you be willing to speak to other classes?

No _____ Yes, same school _____ Yes, other schools also _____

Students especially enjoy demonstrations or seeing workers' tools, uniforms, equipment, etc.

Would you be free to assist the teacher: in the classroom _____
on field observations _____

In this project we often need items like empty spools, plastic jugs, egg cartons, cardboard boxes, egg beaters, mixing bowls, newspapers, etc. Occasionally your child may be asking you about assisting us with these things.

Do you have any contacts with people who may like to speak or suggestions related to places we may take students to see workers on the job? _____

We would appreciate your comments, suggestions, and ideas.

_____

_____

_____

Please return to your child's teacher.

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# Appendix G

COMMUNITY RESOURCE QUESTIONNAIRE

1. What is the name and address of your business?

_____ Phone:

_____ Phone: _____

2. Whom should we contact when requesting employees to come and speak to students?

_____

3. Whom should we contact to arrange for a visit? _____

4. How much time in advance of a visit must the contact be made?

_____

5. Could someone come to the classroom beforehand to prepare the students for the visit?

_____

6. Are there any films, tapes, etc., that could be used for instructional purposes? If so, who should be contacted?

_____

7. Is there a specific day or time during the week that would be the most beneficial time for a career visit?

_____

8. What areas of your business do you feel are unique? _____

_____

9. Are there any special safety precautions to be observed during the visit?

_____

10. Do you know any other ways that community resources could contribute to the education of our children?

_____

Please return to: Warren Consolidated Schools
Career Development Center
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# Appendix H

REQUEST FOR VISITATION

Name of School or Organization _____

Person to be Contacted _____ Phone _____

Complete Address _____

Visitation Date Preferred: _____

| Visitor's Name | Responsibility or Job Title |
|---|---|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

Interested in:

A. _____ An overview of the Project with Project personnel (brief explanation giving background and/or orientation; review of media and instructional materials; questions, answers, and discussion).

B. _____ Classroom visitations.

_____ Elementary - Grades _____

_____ Secondary - Junior High _____
Senior High _____
Specific Subject Areas _____

C. _____ Visiting with teachers at an in-service workshop.

_____ Elementary - Grades _____

_____ Secondary - Junior High _____
Specific Subject Areas _____

D. _____ Talking with administrators and/or principals.

Please Return Reservation Form to: Warren Consolidated Schools
Project Care

# Appendix I

NOT FOR REPRODUCTION

PROJECT CARE
WARREN CONSOLIDATED SCHOOLS

# FAMILY MEMBERS AS PRODUCERS AND CONSUMERS

Rose Ferrante - Fillmore Elementary

Primary Grades

PROJECT

C areer
A wareness through
R ealistic
E xperiences

ALFRED F. BRACCIANO
Director of Vocational and Technical Education

B. CAROL TURNER
Project Coordinator

MARY TREADWAY
Career Education Specialist

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## UNIT RATIONALE

The purpose of this unit is to make the student aware of the world of work by relating to work and occupations that are meaningful to him. He will learn how the family's needs and wants are supplied by workers; he will discover how one worker depends on another for survival.

The student will have an opportunity to see the worker as an important human being who fulfills many roles in life (citizen, family member, etc.). The student should become aware that the usual stereotyping of male-female work roles is not realistic in today's society.

Emphasis is placed on improving pupil performance by unifying and focusing basic subjects around a theme that is occupationally-oriented and activity-centered.

The following components are incorporated throughout the unit:

--a career-oriented theme

--correlated curriculum

--role playing

--parental participation

--use of occupational role models

--hands-on activities

--field observations

## TEACHING PROCEDURES

The design of this unit allows the instructor to introduce "Family Members as Producers and Consumers" as an integrated curriculum, correlating many disciplines or with the emphasis on one particular discipline.

The unit's flexibility affords the teacher the opportunity to adapt the unit to accommodate his particular situation. In this unit, there are behavioral objectives with activities suggested to help accomplish the objectives. The activities the teacher uses should be geared to the interests, needs, and abilities of the specific group of students; the home conditions and environment of each student will determine the way each task is completed. Many of the unit's activities concern the student's parents and their occupations; it is understood that this can refer to many people: the student's father, mother, guardian, grandparent, aunt, uncle, brother, sister, etc.

The unit is suggested for use in primary grades. The teacher will determine the length of the unit, based on student interest and teacher's method of presentation.

It may be advisable to arrange in advance for field observations and occupational role models in order to insure availability during implementation of the unit.

References made to resources used in this unit are based on the following key:

| | |
|---|---|
| Books | (B) |
| Field Observations | (FO) |
| Filmstrips | (FS) |
| Occupational Role Models | (ORM) |
| Teacher Reference Materials | (TRM) |
| Worksheets | (W) |

Chapters 7 and 8, Unit 2, of Lawrence Senesh's set of books titled Families provides information that could be incorporated into the unit. The above references are part of the 1973 series, "Our Working World," published by Science Research Associates, Inc., Chicago, Illinois.

## MAJOR AND SUB-GOALS OF THE UNIT

Major Goal of the Unit--The student will become aware of the relationship between the family and its role within the producer-consumer society.

A. The student will become aware of the significance of work as related to his own family.

B. The student will become familiar with work as related to goods, services, producers and consumers.

PRE-POST TEST TEACHER INFORMATION

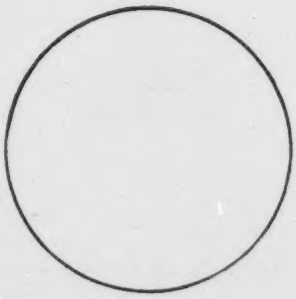
This is a test to determine how much the student knows about work and the relationship between the family and its role within the producer-consumer society.

If the student does not have sufficient reading and writing skills for written performance, oral testing may be necessary. In this case, parents, or upper grade students, should be used to record responses.

Be careful that the student is not prompted, so that the test will accurately reflect what he knows. Pre-test responses will be compared with post-test results; effectiveness of the unit will be based on student growth.

PRE-TEST

1. Draw the face showing the way you feel about work.



2. Does someone in your family have a job? Yes_____ No_____

   Who is the person? _____

   What is the person's job? _____

3. If the person produces a product at his job, draw a picture of the product in the box. If the person provides a service, leave the box empty.

4. The workers below provide you with goods or services. Put "S" on the picture if the person provides a service. Put "G" if the person produces goods.

Major Goal--The student will become aware of the relationship between the family and its role within the producer-consumer society.

A. The student will become aware of the significance of work as related to his own family.

| OBJECTIVES | SUGGESTED ACTIVITIES |
|---|---|
| 1. Given a twenty-minute teacher-directed discussion, the student will tell a story related to his own personal knowledge of his family at work. | Discuss the following questions:<br>What is work?<br>Who are the workers in your family?<br>What kind of work do they do?<br>How many work inside the house?<br>Who works inside the house?<br>Why do some members of your family work outside the house?<br>Do any of you receive an income? |
| 2. Given the necessary materials, the student will draw crayon pictures of each member of his family performing his work. | Label crayon portraits of the members of the student's family who work.<br>Read or listen to the story, Fathers at Work (B-3).<br>View filmstrip, "What Does Your Dad Do?" (FS-6).<br>View filmstrip, "Father Works for The Family" (FS-4).<br>Read or listen to the story, Mommies at Work (B-4).<br>Make large class booklet "Our Family Workers" by drawing a picture of parents at work. Write a one-line caption for the picture. |
| 3. Given a drawing of an object representative of his parent's work, or the object itself, the student will tell the class how his parent uses the object in his work. | Bring to school for display an object that is representative of a parent's work, such as a book, tool of some sort, gloves, chalk, nail, helmet, special clothing, etc.<br>Draw a symbol representative of parent's work to be displayed.<br>Construct a bulletin board of parents at work. |

| OBJECTIVES | SUGGESTED ACTIVITIES |
|---|---|
| 4. Utilizing previous experiences, the student will write a letter inviting his parents to come to share their work experiences with the class. | Plan to go on a field trip (FO-1), and invite occupational role models (ORM-1) to come to speak to the class about their work.<br>Dictate a letter to the teacher or an aide.<br>Write an individual letter or a group letter, on the board or on chart paper. |
| 5. Given teacher-directed discussion, the student will design a minimum of four questions related to the worker's job environment, work performed, qualifications, and contributions to society. | Formulate questions to ask occupational role model.<br>Participate in guest speaker's presentation by listening and asking questions. |
| 6. After listening to parent's presentation, the student will name at least two new ideas gained from the experience. | After guest speaker's presentation discuss new ideas learned.<br>Write thank you letters telling new ideas learned from guest speakers. |

B. The student will become familiar with work as related to goods, services, producers and consumers.

| OBJECTIVES | SUGGESTED ACTIVITIES |
|---|---|
| 1. Given materials and following teacher-directed discussion, the student will draw a picture of his family in their role as consumers. | Orally describe the drawing.<br>Discuss these questions:<br>What is a consumer?<br>When are you a consumer?<br>Why are all workers consumers? |
| 2. Given a drawing of family members at work (see #2 above), the student will tell the class whether each person is producing goods or rendering services, and identify the goods or service. | View filmstrips:<br>"A Collar for Patrick: Buying Goods and Services" (FS-1),<br>"Daniel's Birthday: Choosing Goods and Services" (FS-3), and<br>"Michael's Moon Store: Producing Goods and Services" (FS-5).<br>Discuss these questions:<br>What is meant by producing goods?<br>What is meant by rendering a service?<br>What are some services you render at home?<br>Using pictures, identify ten items that represent foods and tell who produced them.<br>Name items (goods) of food, clothing, and household furnishings the family purchases in stores. |
| 3. Given a worksheet, the student will classify five workers based on whether they produce goods or render services with 80% accuracy. | Classify workers using worksheet (W-1). |

| OBJECTIVES | SUGGESTED ACTIVITIES |
| --- | --- |
| 4. Given play money, the student will simulate paying for goods and services. | Role play paying for goods and services, using the situations in the student's pictures of family members at work.<br>Discuss these questions:<br>Where do you go to buy milk?<br>How much does milk cost?<br>Where do you go to buy a dentist's services?<br>What do you give the dentist for fixing your teeth?<br>Where do you go to buy postal services?<br>How much do you pay to mail a letter?<br>What do people use to pay for both goods and services? |

Other Suggested Activities:

Write and present a dramatic play describing why work is important to the happiness, safety, and welfare of families and communities.

Construct a picture dictionary of new words introduced during the unit.

Compose worker-related verses for a musical activity (TRM-1).

POST-TEST

1. The workers below provide you with goods or services. Put "S" on the picture if the person provides a service. Put "G" if the person produces goods.

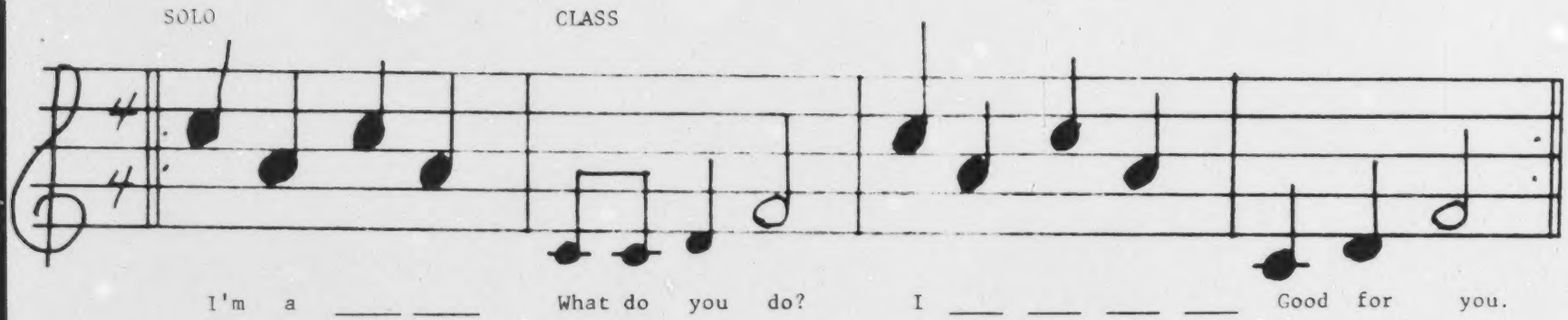
2. Does someone in your family have a job? Yes_____ No_____

   Who is the person? _____

   What is the person's job? _____

3. If the person produces a product at his job, draw a picture of the product in the box. If the person provides a service, leave the box empty.

4. Draw the face showing the way you feel about work.








Hand in hand we'll work together
Helping one another
I'll help you,
You help me
And we'll all help one another.

NOTE: It is suggested that each student compose an original verse based on his occupational interest area. The above verse may be used as a refrain.

DIRECTIONS: If the worker produces goods, place a "G" under the picture.
If the worker renders a service, place an "S" under the picture.

## BIBLIOGRAPHY

BOOKS (B)


1. Hoffman, Elaine. About Family Helpers. Los Angeles, Melmont Publishers, 1954.
2. Radlaner, Edward & Ruth. Whose Tools are These? New York, Elk Grove Press, Inc., 1968.
3. Rotlauer, Ruth Shaw. Fathers at Work. Chicago, Melmont Publishers, 1958.
4. Rotlauer, Ruth Shaw. Mommies at Work. Chicago, Melmont Publishers, 1959.
5. Tresselt, Alvin. A Day with Daddy. New York, Lothrop, Lee and Shepard Co., Inc., 1954.


FILMSTRIPS (FS)


1. "A Collar for Patrick: Buying Goods and Services." (Sound filmstrip) AVI Associates, Inc., New York.
2. "Adam Builds a Bank: Saving for Goods and Services." (Sound filmstrip) AVI Associates, Inc., New York.
3. "Daniel's Birthday: Choosing Goods and Services." (Sound filmstrip) AVI Associates, Inc., New York.
4. "Father Works for the Family." SVE, Inc., Chicago.
5. "Michael's Moon Store: Producing Goods and Services." (Sound filmstrip) AVI Associates, Inc., New York.
6. "What Does Your Dad Do?" Jam Handy Presentation of Scott Education Division, Holyoke, Massachusetts.


FIELD OBSERVATIONS (FO)

Assist students in arranging to spend one day on the job with a family member or some other worker.

OCCUPATIONAL ROLE MODELS (ORM)

Assist students in scheduling parents to speak to the class about their occupation

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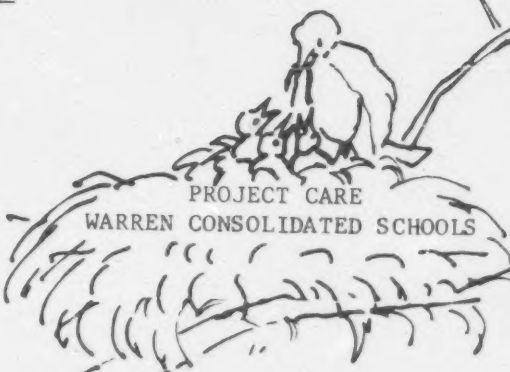

PROJECT CARE
WARREN CONSOLIDATED SCHOOLS

# WORKERS IN NATURAL RESOURCES

Theresa LaJeunesse - Frost Elementary
Lila Lewis - Bever Elementary
Letha Van Laan - Rockwell Elementary

Grade 5

P R O J E C T

C areer
A wareness through
R ealistic
E xperiences

ALFRED F. BRACCIANO
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## UNIT RATIONALE

Because Natural Resources are such an integral part of the child's life, children should be aware of the personnel and work in the field of natural resources.

The purpose of this unit is to acquaint students with the segment of the occupational cluster, Agriculture--Natural Resources.

The usual stereotyping of male-female roles is not realistic in today's society. This is an important factor to consider in teaching the unit.

Emphasis is placed on improving pupil performance by unifying and focusing on basic subjects around a theme that is occupationally-oriented and activity-centered.

The following components are incorporated throughout the unit:

--a career-oriented theme

--correlated curriculum

--role playing

--parental participation

--use of occupational role models

--hands-on activities

--field observations

## TEACHI. PROCEDURES

The design of this unit allows the instructor to teach Natural Resource occupations in the context of a single discipline (i.e. Language Arts, Science) or as an integrated curriculum, correlating all disciplines.

The unit's flexibility affords the teacher an opportu ity to adapt the unit to accommodate his particular situation. In this unit there are two major goals with overlapping objectives and activities. Although these goals are stated separately, they are taught concurrently. The activities the teacher uses should be geared to the interests, needs and abilities of the class. Geographical areas, home conditions, ethnic composition and environment must be considered in the over-all teaching of the unit. The unit is constructed for use in the fifth grade.

The teacher will determine the length of the unit; duration should range from two to five weeks, based on student interest and teacher's method of presentation. It may be advisable to arrange in advance for field observations and occupational role models in order to ensure availability during implementation of the unit.

References made to resources used in this unit are based on the following key:

| | |
|---|---|
| Books | (B) |
| Field Observations | (FO) |
| Filmstrips | (FS) |
| Games | (G) |
| Occupational Role Models | (ORM) |
| Teacher Reference Material | (TRM) |
| Worksheets | (W) |

## SUGGESTED PREPARATION FOR THE TEACHER

1. Become familiar with the entire unit. Decide which worksheets need to be duplicated for the students.

2. Give Pre-Test before introducing the unit to the students.

3. Provide a wide selection of books from the public library; request films and filmstrips. (See Bibliography and TRM-3.) Write to Universities for catalogs and brochures regarding courses offered in Natural Resource, Conservation, and Forestry departments.

4. Organize materials to be used in experiments.

5. Display pictures of occupations performed by natural resource workers. (Small pictures may be enlarged by using an opaque projector.)

6. Plan to use pictures as points of reference for role playing, panel discussions, pantomimes, etc.

7. If the school system provides an Outdoor Education Program, gear activities toward preparing for camp.

8. Plan to have every student complete the performance objectives but allow for a wide selection of student activities. It is not expected that every student will do all the activities.

9. Give the Post-Test.

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MAJOR GOALS OF THE UNIT

I. The student will become more aware of the interrelatedness and interdependence of people and occupations in the field of Natural Resources.

   A. The student will become more aware of the PERSONNEL AND JOBS related to the field of natural resources.

   B. The student will develop an insight into the relationship of the JOB AND OCCUPATIONAL ENVIRONMENT.

   C. The student will acquire a knowledge of the WORK PERFORMED by natural resource personnel.

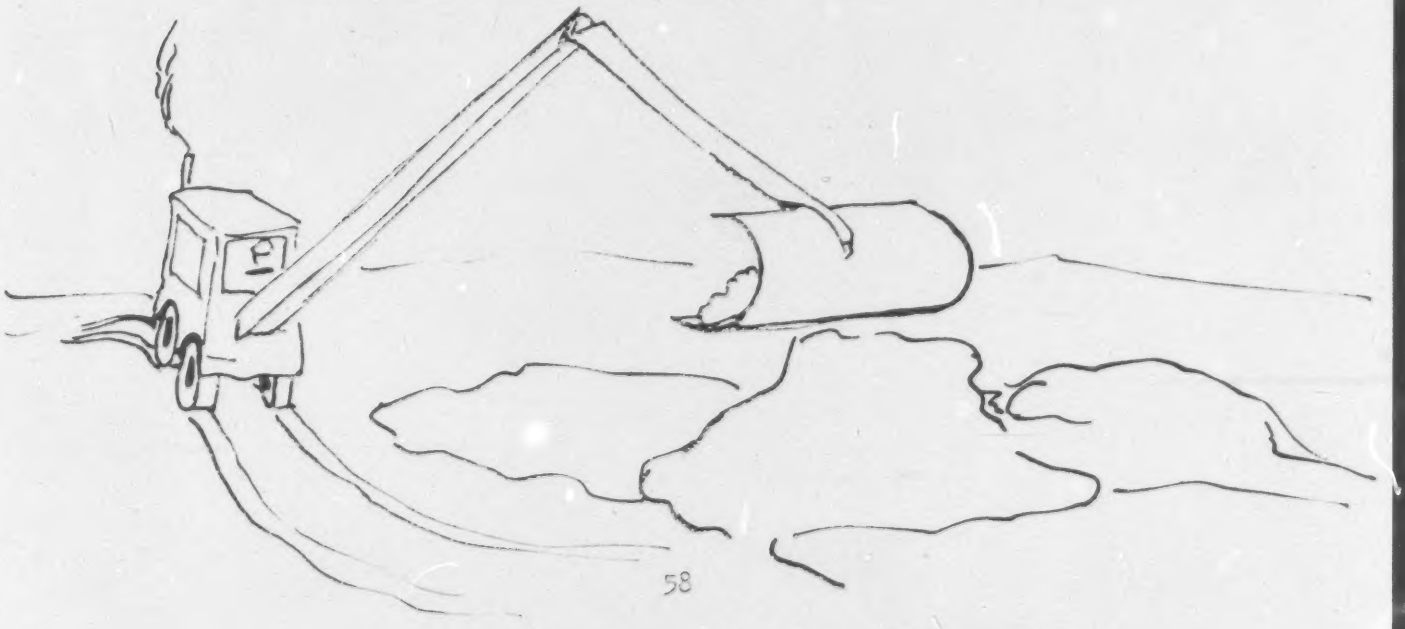
   D. The student will become acquainted with the QUALIFICATIONS necessary for employment in natural resource industries.

   E. The student will gain an appreciation of the natural resource personnel's CONTRIBUTION TO SOCIETY.

II. The student will understand the interrelationship between various subject areas and their application to people and occupations in the Natural Resources Industry.

   A. Science--The student will become aware of the scientific aspects of natural resource occupations.

   B. Language Arts--The student will use communication skills as they relate to natural resource occupations.



PRE-TEST

1. List occupations related to preserving and maintaining our natural resources and name the areas of the U.S. in which they are found.

| JOBS | AREA OF COUNTRY FOUND |
|---|---|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

2. Write the title of a selected natural resource specialist.*

_____

3. Using the natural resource specialist you chose, describe a task which might be performed in the following areas.

research[1] _____

_____

organization[2] _____

_____

supervision[3] _____

* Example: Forester
  1. research - methods to improve the forest crops
  2. organization - plans for use of forest products
  3. supervision - of workers who cut trees, build roads, etc.

PRE-TEST (cont.)

4. How do people involved in working with our natural resources help to improve the quality of life in our country?

5. What does the term "Natural Resources" mean to you?

6. List as many natural resource workers as you can think of, and at least one task each worker performs.

| WORKER | TASK PERFORMED |
|---|---|

7. List five products from our forests and five products from our mines.

I. The student will become more aware of the interrelatedness and interdependence of people and occupations in the field of Natural Resources.

A. The student will become more aware of the PERSONNEL AND JOBS related to the field of natural resources.

Performance Objectives:

1. Given a list of workers, the student will be able to demonstrate an awareness of personnel and jobs by discussing the workers directly involved in the field of natural resources. *

2. Given access to reference material, the student will be able to demonstrate a knowledge of personnel and jobs by presenting a report on one worker in the field of natural resources.

Student Activities:

1. Make a mobile depicting a natural resource worker and his related area of work. (TRM-1)

2. Make a hidden word puzzle using the list of workers in the natural resource field.

3. Name the natural resource worker you would like to be and tell why (TRM-2, 3).

4. Pantomime a person at work in natural resources.

* Teacher background information:

Forester
Oil Well Digger
Farmer
Lumberjack
Miner
Conservationist
Botanist
Biologist
Zoologist
Geologist
Marine Biologist
Oceanographer
Park Naturalist
Landscape Architect

B. The student will develop an insight into the relationship of the JOB AND OCCUPATIONAL ENVIRONMENT.

Performance Objectives:

1. Given an outline map of the U.S. and one class period, the student will be able to locate at least five areas in the U.S. where workers in natural resources might find employment (W-1).

2. Given a list of tools and equipment and a list of natural resource occupations, the student will match the tools and equipment with the appropriate occupations (W-2).

Student Activities:

1. Draw pictures of modern machinery and tools used by workers.

2. Write a poem (i.e., a haiku) on the season's effect on forests and streams which depicts the worker's environment.

3. List products obtained from trees, minerals, rocks, lakes and other natural resources.

4. On a U.S. map locate several areas where a worker would find employment as a miner, a forester, and an oceanographer.

5. While viewing filmstrips, take notes on environment of workers (i.e., Forest, ponds, mines, ocean). (FS-1)

6. Make a list of the natural resources and name all the workers involved in that resource (i.e., Wild life - forester, farmer, conservationist, zoologist, park naturalist ).

C. The student will acquire a knowledge of the WORK PERFORMED by natural resource personnel.

Performance Objectives:

1. Given a worksheet listing natural resource workers and their skills, the student will be able to identify the work performed by matching the skill with the worker (W-3).

2. Following a presentation by an occupational role model, the student will be able to name three job responsibilities related to the career (ORM 1-2).

Student Activities:

1. Prepare a list of questions to ask a natural resource worker.

2. Write an imaginary log describing a day in the life of a forester in a specific situation (W-4).

3. Work in groups planning a pantomime of tasks performed by workers.

4. Make a poster of a natural resource person working at a specific occupation.

5. Measure ocean currents and the temperature of ocean water (W-5).

6. Measure the force of water (W-6).

7. Determine the number of fish an aquarium can adequately sustain (W-7).

8. Chart the changes in fish life in Lake Erie (W-8).

9. Trace the relationship of plants and animals in foods we eat (W-9). Discuss chemicals such as BHA and BHT (information available at health food stores).

10. Observe and be able to explain two kinds of soil conservation techniques.

11. Identify various rock types.

12. Measure and record the growth rate of plants grown in various kinds of soil (TRM-4).

13. Diagram one example of a food chain.

14. Discuss the scientific processes involved in mining.

Student Activities: (cont.)

15. Measure the amount of air you breathe (W-10).

16. Enlarge pictures (almost mural type) from library books of foresters and other natural resource workers and use these pictures as reference points in discussion, pantomimes, etc.
    Pictures enlarged depict:
    1. map making
    2. measuring trees
    3. marking trees
    4. carrying injured camper to ambulance
    5. helicopter seeding
    6. planting seedlings
    7. lookout tower for ranger
    8. smoke jumpers
    9. map of forest areas
    10. any other natural resource worker doing a job.

17. Play "What's My Line?" having a panel of students discover the occupation of a fellow student who is role playing a natural resource occupation.

D. The student will become acquainted with the QUALIFICATIONS necessary for employment in natural resource industries.

Performance Objectives:

1. Given no references, the student will design a minimum of two questions related to occupational qualifications to ask occupational role model.

2. Given access to research material and a selection of an occupation in the field of natural resources, the student will list the job qualifications in that area.

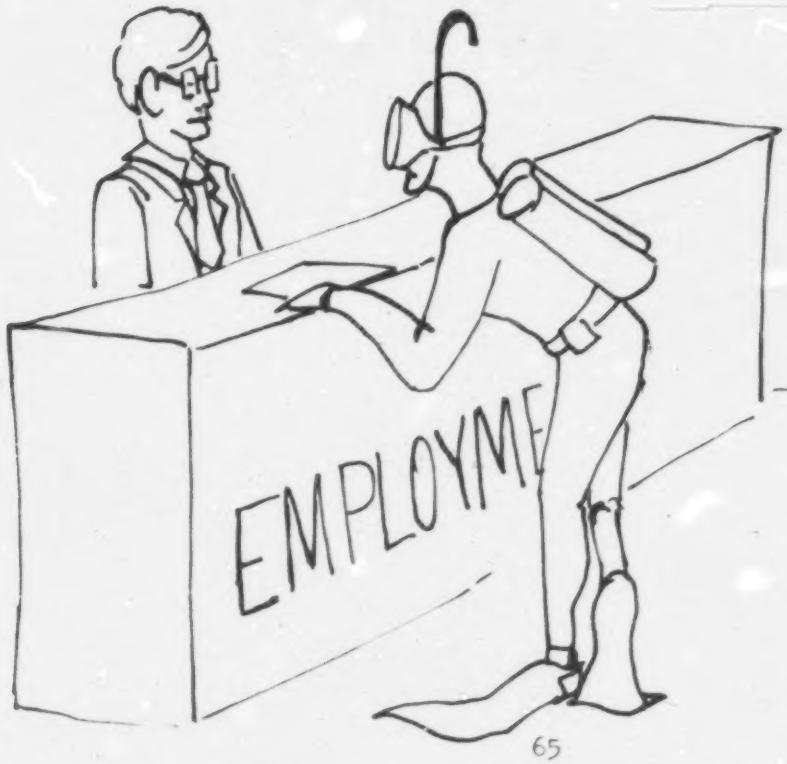
Student Activities:

1. Invite a worker in the field of natural resources to speak to the class about his educational requirements.

2. Role play a person applying for a specific job in the field of natural resources.

3. List character traits a worker should have to perform his duties effectively.

4. Identify the qualifications and jobs of a forester (W-11).



E. The student will gain an appreciation of the natural resource personnel's CONTRIBUTION TO SOCIETY.

Performance Objectives:

1. Given the local newspaper, the student will find one article related to contributions made by persons in natural resource occupations.

2. Given one class period, the student will list orally or in writing, three positive contributions natural resource workers make to society.

Student Activities:

1. Design bumper stickers commending foresters for their conservation efforts.

2. Design a forester recruiting poster stressing service to mankind.

3. Make a mural showing the effects on society of workers in natural resources.

4. Play the Coca-Cola Game. Assume one occupational role and convince the class of its significant contribution. (G-1)

5. Make a montage of pictures showing uses of natural resources in everyday living.

II. The student will understand the interrelationship between various subject areas and their application to people and occupations in the natural resources industry.

A. Science--The student will become aware of scientific aspects of natural resource occupations.

Performance Objectives:

1. Following a class discussion on setting up a terrarium, the student will assemble a terrarium to provide the proper environment for plant life (W-12).

2. Given a worksheet for reference, the student will observe and classify at least three one-cell animals in the laboratory setting (W-13).

Student Activities:

1. Given hay fusions, assemble protozoan environment, and conduct experiment using the microscope (B-36) (TRM-5).

2. Set up an experiment showing the operation of the water cycle and its effect on plants (W-14).

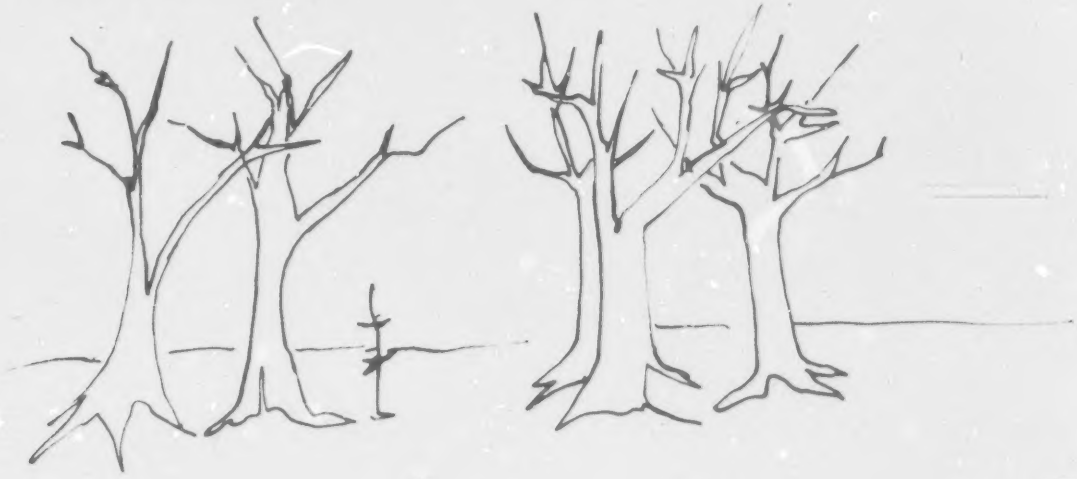
3. Raise brine shrimp and conduct one experiment which includes variable conditions and then chart the results (TRM-6).

4. Construct a model natural filtration system.

5. Observe a filtration plant in your city.

6. Locate kinds of trees found in your area and discuss their uses.

7. Visit a lumber yard and request samples of wood to display, showing their uses.



B. Language Arts--The student will use communication skills as they relate to natural resource occupations.

Performance Objectives:

1. Given a worksheet and information about interviewing, the student will locate and interview one adult worker in natural resources. (W-15)

2. Given access to research material and a worksheet, the student will report on job descriptions for two occupations in the field of natural resources (W-16).

Student Activities:

1. After a field trip present a report on what you observed (FO 1-2).

2. Write and present a short play depicting the relationship between various workers in the natural resources cluster.

3. Write thank-you letters to guest speakers.

4. Write a paragraph on lumbering, or mining.

5. Research and write a two page summary of the history of our U.S. National Parks and their development or related topics. (Example: state park system.)

6. Answer questions on an occupation of your choice in a mock interview situation.

7. Orally identify and discuss five types of natural resources.

8. Match forestry terms with their descriptions (W-17).

9. Put a list of forestry vocabulary words in alphabetical order (W-18).

10. Write a story from an animal's point of view of people's use or abuse of nature.

11. Read about land forms and plan an imaginary country (W-19).

12. Read about landscaping, then plan a park (W-20).

13. Make a book report or read an article on one occupation in natural resources. Answer the questions on (W-21).

14. Do one or more of the activities listed on (W-22).

POST-TEST

1. Make a list of Natural Resource Workers and the location of their jobs in the U.S.

| WORKER | LOCATION |
|---|---|
| | |

2. Which of the above workers need more than a high school education?

3. What special skills would each of the above workers need to know for a particular task.

| WORKER | SKILL | TASK |
|---|---|---|
| | | |

POST-TEST (cont.)

4. What does the term Natural Resources mean to you?

5. Describe what you might see in a natural resource area that requires a worker's knowledge and skill to protect, manage, and make available for people to use.

6. How do people involved in working with our natural resources help to improve the quality of life in our country?

| WORKER | CONTRIBUTION |
| --- | --- |
| | |

# TEACHER REFERENCE MATERIALS

## BOOKS

1. Schegger, T.M. Make Your Own Mobiles. New York, Sterling Publishing Co., 1965.
2. Shirley, Hardy L. Forestry and Its Career Opportunities. New York, McGraw Hill, 1964.
3. U.S. Dept. of Labor. Occupational Outlook Handbook.* Washington, D.C., U.S. Government Printing Office, 1972-73.

* The following occupations are discussed in this book.

Agricultural engineers
Metallurgical engineers
Mining engineers
Geologist
Physicist
Geophysicist
Oceanographer
Meteorologist
Ecologist
Marine biologist
Marine geologist
Botanist
Zoologist
Microbiologist
Conservationist
Forester
Entomologist
Nutritionist
Geographer
Landscape architect
Recreation leader
Surveyor
Smoke jumper
Sewage-plant operator
Farmer
Soil scientist
Livestock veterinarian
Geneticist
Petroleum engineer
Miner
Derrickman
Oil well digger
Lumberjack

Worksheet for measuring growth rate of plants grown in various soils.

1. It is suggested that four types of soil be used. Those easily obtained from this area could be sand, clay, topsoil, and peat.

   (Plants will grow best in peat - then topsoil - clay - and probably will not grow in sand.)

2. Use a hardy plant such as a geranium. Others might be philadendron, lima bean, grass. You will need four plants or seeds planted in four containers.

3. You might use a chart similar to this:

| GROWTH OF A GERANIUM | | | | |
|---|---|---|---|---|
| | Sand | Clay | Topsoil | Peat |
| 1st day | _____cm. | | | |
| 2nd day | _____cm. | | | |
| 3rd day | _____cm. | | | |
| etc. | _____cm. | | | |

Begin measuring from the day the first shoot appears. Indicate how many days since seeds were planted.

If you start with grown plants, make a chart showing the decline (shape, color, size).

# RAISING BRINE SHRIMP

Refer to the SCIS Science Guide entitled Environments - Chapter 10 - p. 66-67, or do the following:

Discuss with children the factors in an environment to which organisms respond, (i. e., light, temperature, water, oxygen). Explain that they will be working with organisms (brine shrimp) that need an additional factor - salt - in their environment.

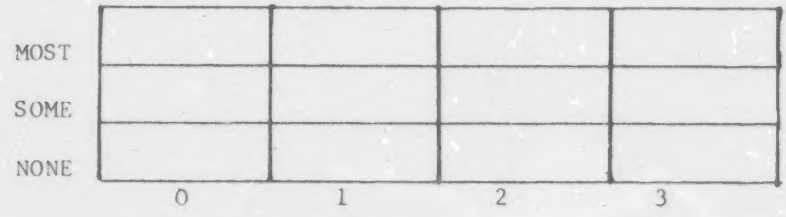
1. Get brine shrimp from any aquarium or fish store.

2. Get four medium-sized jars.

   a. Fill 1/2 of each jar with water.
   b. Add the same amount of brine shrimp to each jar (1/4 tsp.).
   c. Put no salt in first container and add increased amounts of salt to the rest of the containers (e.g. 1/4 tsp., 1 tsp., 2 tsps., 3 tsps.).
   d. Watch each day and chart results.

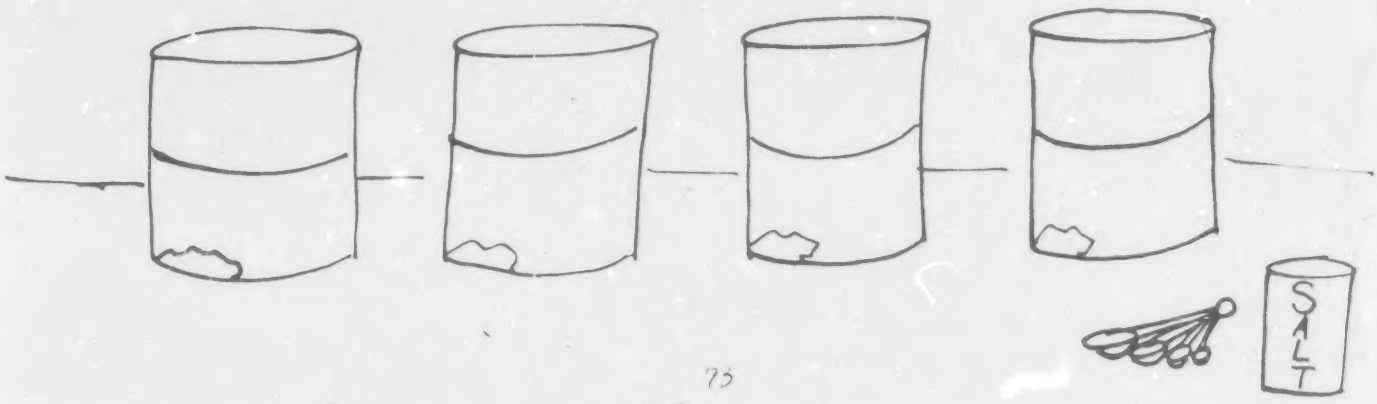
BRINE SHRIMP AND SALT WATER

Hatched:




AMOUNTS OF SALT

If you want to hasten the hatching use an aquarium pump. Connect hose and put into the jars. The moving water aids hatching process.



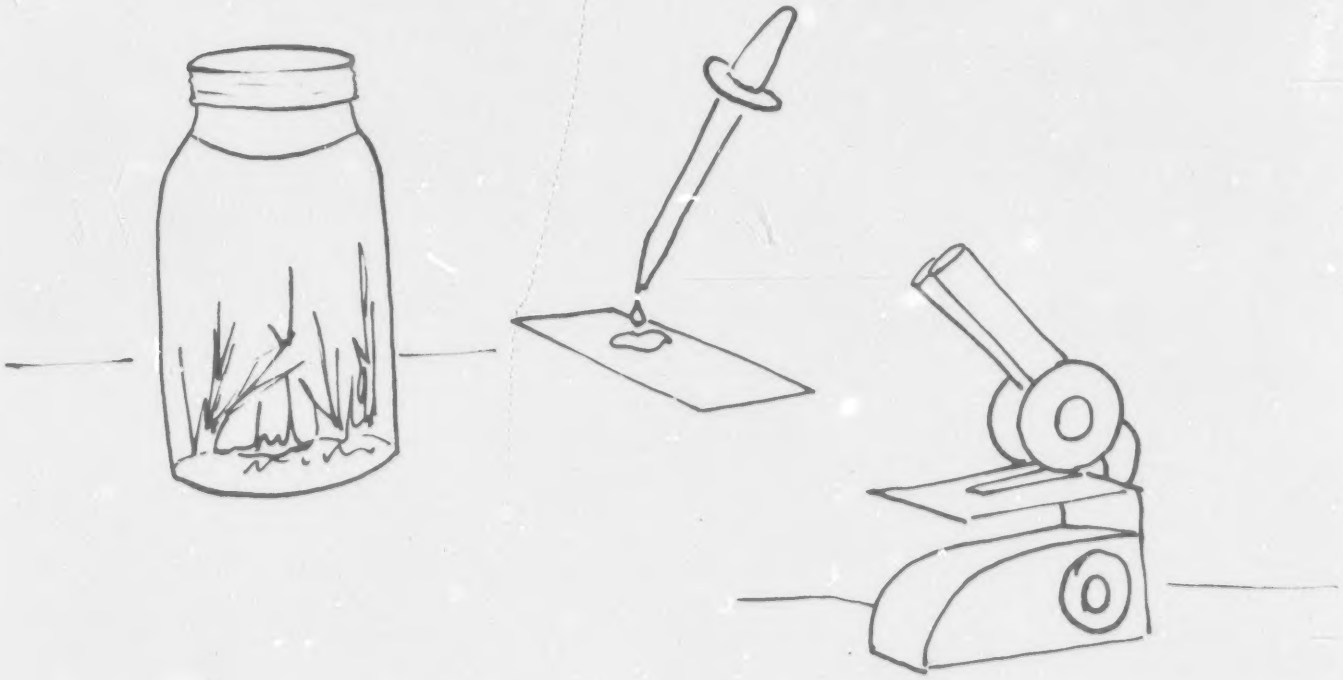
HAY FUSIONS:

To construct hay fusions refer to B-36 in Bibliography, The How and Why Wonder Book of the Microscope and How To Use It, or the following:

I. Put grass, weeds, etc, from outdoors in a quart jar with water from a pond, ditch, or any standing water. Cover loosely to allow air in, but hinder evaporation. Allow to set for four or five days at room temperature. You should then have a variety of multi-celled and single celled animals to view through your microscope.

II. Have students place a drop on a slide or depression slide. (They may add methyle cellulose to slow animals down.) Focus under a microscope and draw what they see.

III. They may use resource books from library to identify their specimens.



Directions: Using this U.S. map, locate at least five areas where workers in the natural resource industry might find employment.

ENVIRONMENT

Directions: On the line after each worker write the numbers from column A that match the workers in column B. There can be more than one correct answer for each worker.

| A | B |
|---|---|
| 1. Animals in cages | A. Forest Ranger _____ |
| 2. Tractors | B. Oil Well Digger _____ |
| 3. Microscopes | C. Farmer _____ |
| 4. Tanks of fish | D. Lumberjack _____ |
| 5. Picks--shovel | E. Miner _____ |
| 6. Tower--telescope | F. Conservationist _____ |
| 7. Oil drill | G. Botanist _____ |
| 8. Two-man submarine | H. Biologist _____ |
| 9. Axe | I. Zoologist _____ |
| 10. Drawing board | J. Geologist _____ |
| 11. Terrarium | K. Marine Biologist _____ |
| 12. Graphs and charts | L. Oceanographer _____ |
| 13. Magnifying glass | M. Park Naturalist _____ |
| 14. Geiger counter | N. Landscape Architect _____ |
| 15. Conveyor | |
| 16. Specimen on glass slides | |

ANSWERS FOR W-2

OCCUPATION

A. Forest Ranger 5 - 6 - 9 - 12

B. Oil Well Digger 7

C. Farmer 2 - 5 - 9

D. Lumberjack 5 - 9 - 15

E. Miner 5 - 7 - 9 - 14

F. Conservationist 1 - 3 - 4 - 12 - 16

G. Botanist 3 - 11 - 12 - 13 - 16

H. Biologist 3 - 11 - 12 - 13 - 16

I. Zoologist 1 - 3 - 12 - 13 - 16

J. Geologist 5 - 9 - 12 - 13

K. Marine Biologist 4 - 8

L. Oceanographer 4 - 8

M. Park Naturalist 10 - 12

N. Landscape Architect 10 - 13

# NATURAL RESOURCE SKILLS

Match the list of skills with the list of Natural Resource Workers:

| WORKERS | SKILLS |
|---|---|
| _____ 1. Soil Conservationist | a. Cuts trees for lumber |
| _____ 2. Fisherman | b. Plans and supervises grounds |
| _____ 3. Zoologist | c. Fishes |
| _____ 4. Meteorologist | d. Examines particles of the earth |
| _____ 5. Geologist | e. Studies underwater life |
| _____ 6. Oceanographer | f. Studies animals at the zoo |
| _____ 7. Landscape Architects | g. Studies the ocean |
| _____ 8. Forester | h. Studies how weather affects the earth |
| _____ 9. Marine Biologist | i. Supervises the use of forest resources |
| _____10. Lumberman | j. Works on soil conservation |
| _____11. Botanist | k. Studies plant life |

ANSWER SHEET FOR W-3

j 1. Soil Conservationist

c 2. Fisherman

f 3. Zoologist

h 4. Meteorologist

d 5. Geologist

g 6. Oceanographer

b 7. Landscape Architects

i 8. Forester

e 9. Marine Biologist

a 10. Lumberman

k 11. Botanist

FORESTER'S OCCUPATIONS

Directions: Write an imaginary log describing a day in the life of a forester. Below are some suggestions.

_____estimate amounts of timber resources

_____estimate amounts of game resources

_____protect wildlife

_____inspect for trees that need treatment

_____design, select, and install logging equipment

_____decide how many trees must be planted

_____scatter seeds from helicopters

_____control disease and insects

_____design road, dams

_____thinning out dense areas

_____supervise road building

_____make plans for building camp sites

_____watch out for safety of campers

_____select trees to be cut

_____lookout from tower for fires

_____issue permit to build campfires

_____find "lost" hikers

_____give talks to groups of people and clubs

_____use computers to collect information

_____take pictures (aerial photography) from planes

_____do research in technical laboratories of manufacturing companies, sawmills, paper plants

_____work in greenhouses planting seedlings

_____working with radio communications

# MEASURING OCEAN CURRENTS

Directions: To find out how the sea is studied do the following activities:

I. In an Atlas, Encyclopedia, or World Almanac, read about the kinds of things oceanographers study, then answer these questions:

A. How is the sea studied?
B. How do oceanographers measure currents?
C. What happens to the water temperature in the ocean as the depth increases?
D. How does the pressure of water change as the depth increases?
E. Why do deep-sea divers wear heavy pressure suits?

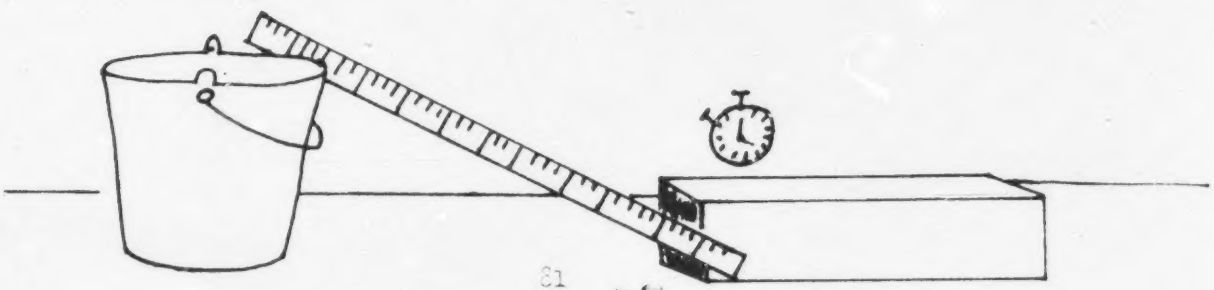
II. Make a chart showing the following information about the ocean.

| DEPTH | PRESSURE | TEMPERATURE |
|---|---|---|
| | | |
| | | |

III. Now try this experiment. Collect a pail, yardstick, watch, small block of wood. Hollow out a long shallow trench, or find a natural trench. Mark off a given distance. Set the piece of wood in one end of the trench. Pour a bucket of water into the same end at a steady rate. How long does it take the wood to float the measured distance? Try this several times. (See diagram on next page.)

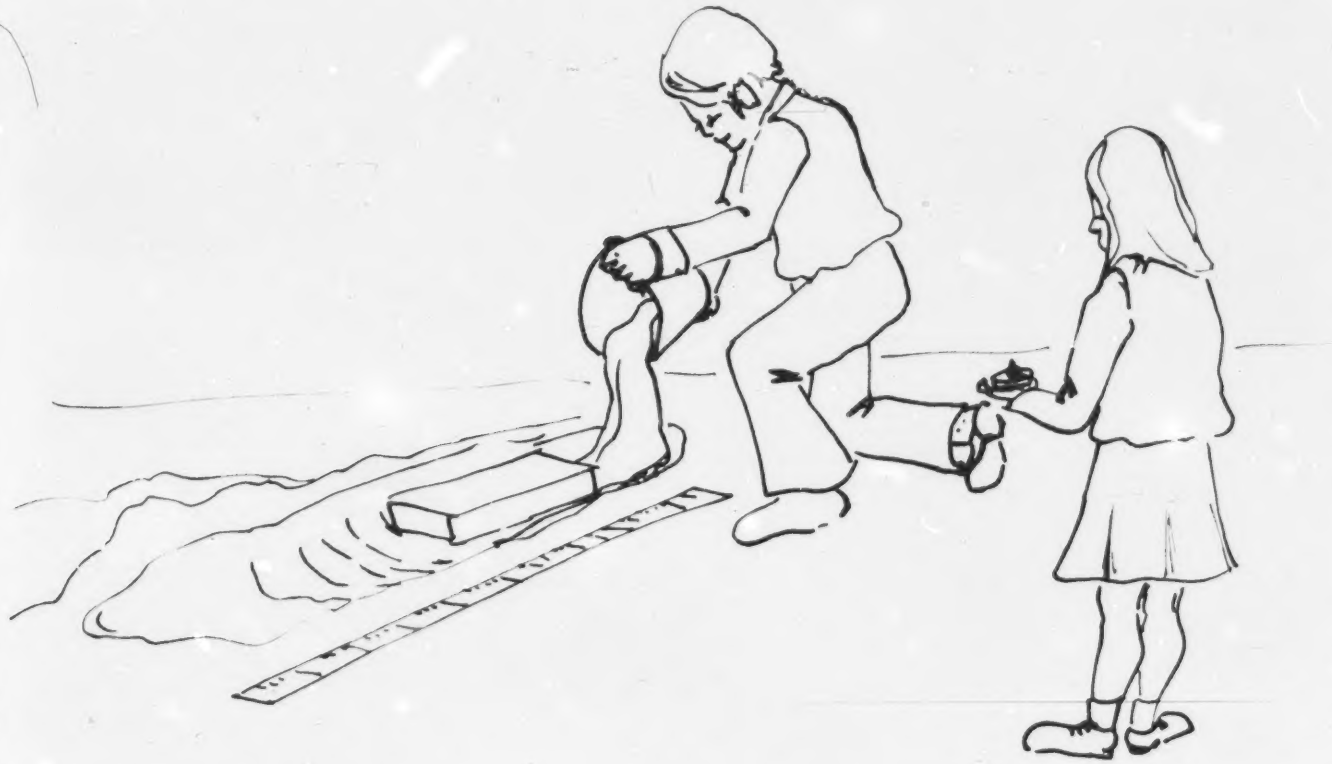
How fast does the wood move? Convert your measurement to miles or kilometers per hour, and compare this with speeds of ocean currents.

How do oceanographers use drogues to measure subsurface ocean currents? What other devices are used to measure the speed of ocean currents?



MEASURING OCEAN CURRENTS

Use the second hand on your watch, or a stop watch to measure how long it takes the wood to go the measured distance.



IV. Explain how oceanographers chart migration paths of various kinds of sea creatures. See if any of these paths are related to major ocean currents.

# WATER FORCE

Directions: The following experiment will help you to understand the force of water.

1. Gather:
   - Masking tape
   - One quart milk carton
   - One-half gallon milk carton
   - Straight pin
   - Ruler
   - Scissors
   - Sink area at which to work

2. Cut the tops out of cartons. Using the pin, make three holes in the carton--the first hole should be one inch from the bottom, the second hole should be three inches from the bottom, the third hole should be five inches from the bottom. Make all the holes the same size.

3. Cover all the holes with masking tape. Pour seven inches of water into carton. Measure distance from each hole to top of water.

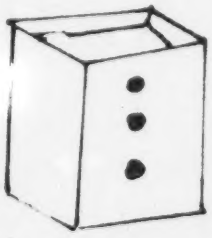
4. Uncover the top hole. How far from the carton does the water spout?

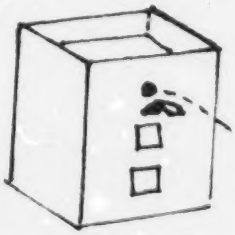
5. Replace the tape that was pulled from the top hole. Refill the carton to the seven inch level. Now measure the distance the water spouts from the second hole. Begin the table like this:

| Height of water above hole | Length of spout |
|---|---|
| | |

6. Predict the distance for the third hole. Make a test.

7. Do the same for the 1/2 gallon container. Record the results.



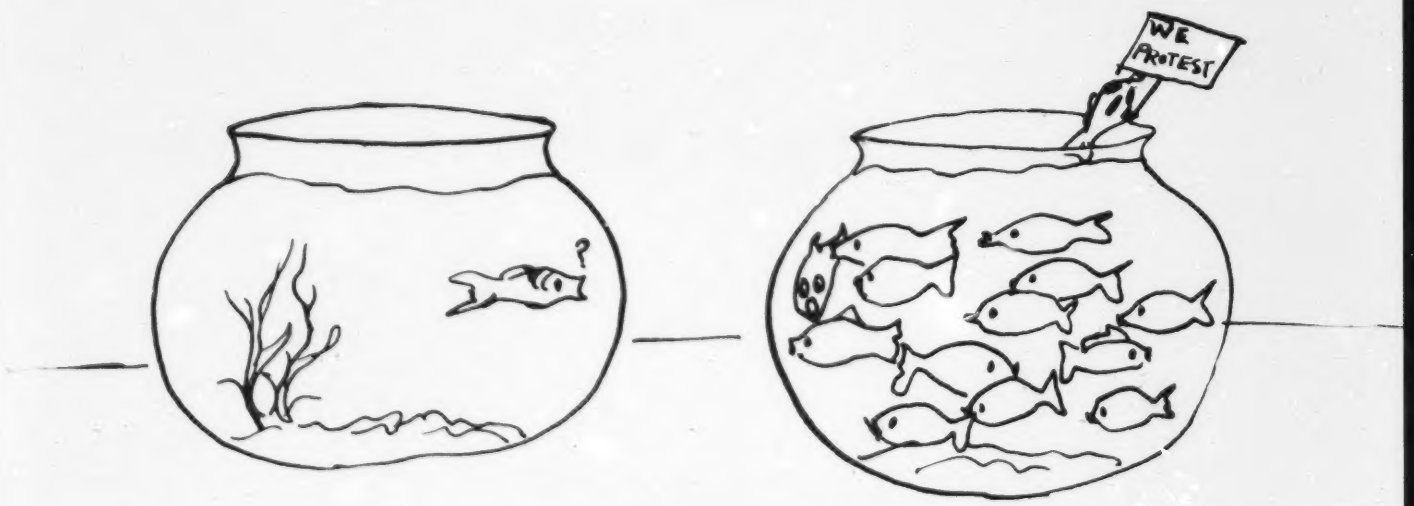


# AQUARIUM CAPACITY

Directions: Given the following information complete the chart below.

If an aquarium can hold a 1-1/2" long fish per one half gallon of water, how many fish can an aquarium support in the following sizes of containers?

| AQUARIUM SIZE IN GALLONS | NUMBER OF FISH 1-1/2" LONG |
|---|---|
| 1 | 2 |
| 5 | 10 |
| 10 | |
| 20 | |
| 50 | |



# FISH IN LAKE ERIE

Directions: Study the data on commercial fish caught in Lake Erie from 1879-1964. Do you notice a growth in undesirable fish? Make bar graphs for each year using a different color to represent each fish. Work in teams. Line up the completed graphs and explain the trend you observe.

| YEAR | DESIRABLE | UNDESIRABLE |
|---|---|---|
| 1879-1909 | Whitefish-- 2,500,000<br>Cisco-- 25,000,000 | Perch-- 2,600,000<br>Carp-- 2,600,000 |
| 1910-1919 | Whitefish-- 2,700,000<br>Cisco-- 27,000,000 | Perch-- 2,600,000<br>Carp-- 7,000,000 |
| 1920-1929 | Whitefish-- 1,900,000<br>Cisco-- 17,000,000 | Perch-- 6,000,000<br>Carp-- 3,200,000 |
| 1930-1939 | Whitefish-- 2,100,000<br>Cisco-- 1,000,000 | Perch-- 9,000,000<br>Carp-- 2,500,000 |
| 1940-1949 | Whitefish-- 4,000,000<br>Cisco-- 3,000,000 | Perch-- 4,000,000<br>Carp-- 3,000,000 |
| 1950-1959 | Whitefish-- 1,900,000<br>Cisco-- 1,000,000 | Perch-- 6,000,000<br>Carp-- 3,800,000 |
| 1960-1969 | Whitefish-- 300,000<br>Cisco-- 200,000 | Perch-- 20,000,000<br>Carp-- 4,100,000 |

FOOD INGREDIENTS

Directions: To show relationship of plants and animals in the foods we eat, list the ingredients found in canned beef stew and in corn flakes. Use the table below to separate the ingredients into plant, animal, or chemical origin.

INGREDIENTS IN CANNED BEEF STEW

| PLANTS | ANIMALS | CHEMICALS |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

INGREDIENTS IN CORN FLAKES

| PLANTS | ANIMALS | CHEMICALS |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

# MEASURING AIR YOU BREATHE

Directions: Perform the following experiment to help you answer the questions below.

1. Gather the following materials: Two three feet rubber tubes; one gallon plastic, narrow-neck jug, pan four or five inches deep that holds at least two gallons.

2. Invite two people to assist you.

3. Fill the jug with water, put about two inches of water in the pan. Put the cap on the jug. Turn the jug upside down. Put it in the pan so that the neck is just under water. Reach under the water and remove the cap. The water should stay in the jug. One person holds the jug.

4. Put one end of the tube in the water and up into the jug. Take a normal breath and breathe out through the tube. This air should push some water out of the jug.

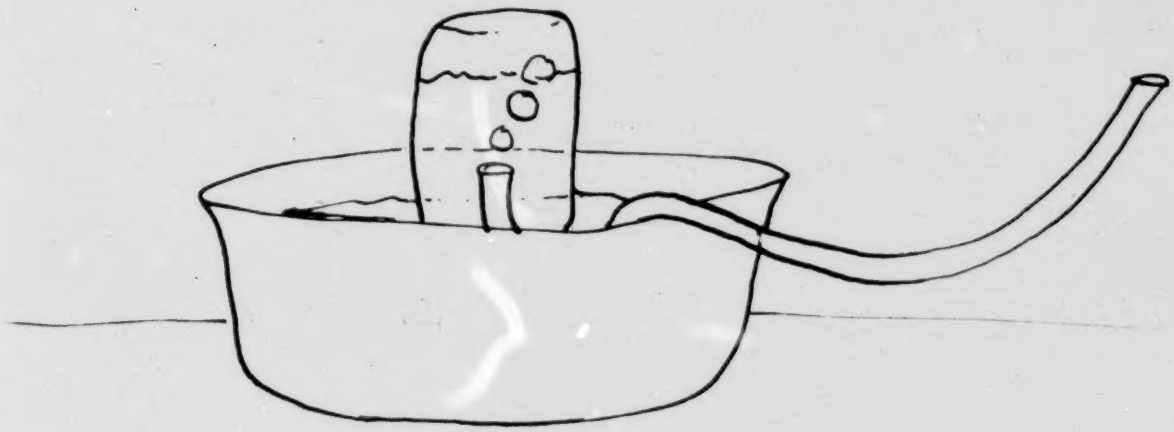
5. Continue doing this making sure you count your breaths, until all the water is out.

6. Now answer the following points.

   Tell the value of the jug.
   Tell how many times you breathed through the tube.
   Estimate the volume of one breath.

   Redo the experiment--do you get the same results?

   Tell how many times you usually breathe in one minute.
   Tell how much air you breathe in one minute.
   Estimate the volume of your classroom.
   Estimate how long it would take you to breathe that much air.



FORESTER

Check below the qualifications and jobs of a forester.

1._____Be a responsible, alert person

2._____Speak in public

3._____Fight fires

4._____Build homes

5._____Protect wildlife

6._____Know tree structure

7._____Use computers

8._____Sell homes

9._____Administer first aid

10._____Make maps

11._____Manage a department store

12._____Sell insurance

13._____Find lost people

14._____Forecast changes in weather

15._____Cut trees

16._____Work in research laboratories

17._____Report on current events

18._____Plan menus

19._____Investigate theft crimes

20._____Plan construction of dams

21._____Repair telephone wires

22._____Grow corn and wheat for forage

23._____Conduct tours

24._____Prevent tree disease

25._____Teach college forestry courses

26._____Sell souvenirs

27._____Be an auto mechanic

28._____Build furniture

29._____Print newspapers

30._____Report telephone lines down

31._____Be responsible for forest conservation

32._____Solve problems of insect-infested trees

33._____Record tree diameters

34._____Plan forest uses

35._____Conduct field trips

36._____Love outdoor living

37._____Able to work alone

38._____Protect watersheds

39._____Manufacture cars

40._____Direct plays

41._____Repair plumbing

42._____Paint homes

43._____Manage a supermarket

44._____Plant new trees

# ANSWER SHEET FOR W-11

## Checked Answers

| | | |
|---|---|---|
| 1 | 15 | 32 |
| 2 | 16 | 33 |
| 3 | 20 | 34 |
| 5 | 22 | 35 |
| 6 | 23 | 36 |
| 7 | 24 | 37 |
| 9 | 25 | 38 |
| 10 | 30 | 40 |
| 13 | 31 | 44 |

## Unchecked Answers

| | | |
|---|---|---|
| 4 | 18 | 29 |
| 8 | 19 | 39 |
| 11 | 21 | 41 |
| 12 | 26 | 42 |
| 14 | 27 | 43 |
| 17 | 28 | |

# INSTRUCTIONS FOR CONSTRUCTION OF TERRARIUM

Build a terrarium (Community). (Use 10 or 15 gallon tank)

-- add 1 inch crushed charcoal
-- add 3 to 4 inches of dirt

## PLANTS (Producers)

-- grass seeds
-- radish seeds
-- wheat seeds
-- mustard seeds
-- bean seeds

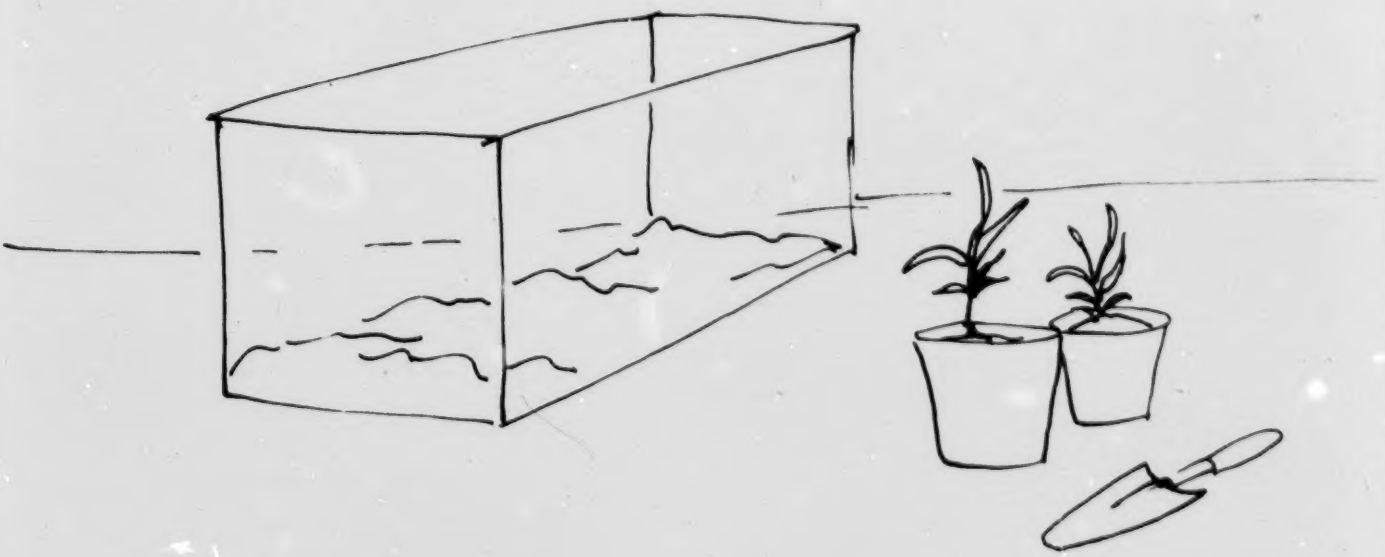
Plant in separate containers--wait until they have grown for at least three weeks, plant in terrarium.

## ANIMALS (Consumers)

-- 50 to 100 crickets
-- 50 to 100 isopods
-- 50 to 100 mealworms
-- 1 to 2 frogs

Add one of the species at a time for a week and study what they eat--relationship between plants and animals.

On a separate sheet record the information you observed.



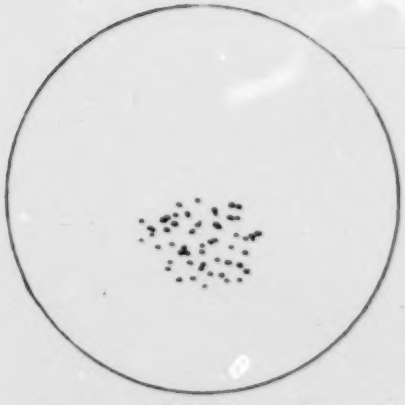
# ONE-CELLED ANIMALS

Directions: Use this as a guide as you observe and classify at least three one-celled animals.

COCCI COCCI IN CHAINS

BACILLI SPIRILLIA

BACTERIA

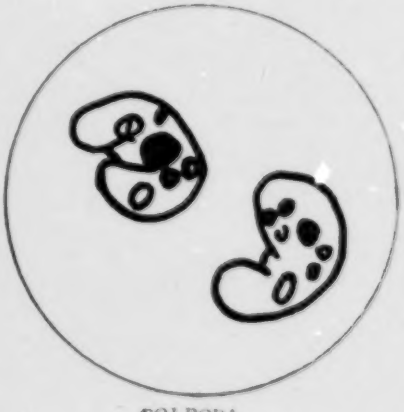


VOLVOX COLONY

STENTOR

CHRYSAMOEBA

PARAMECIUM



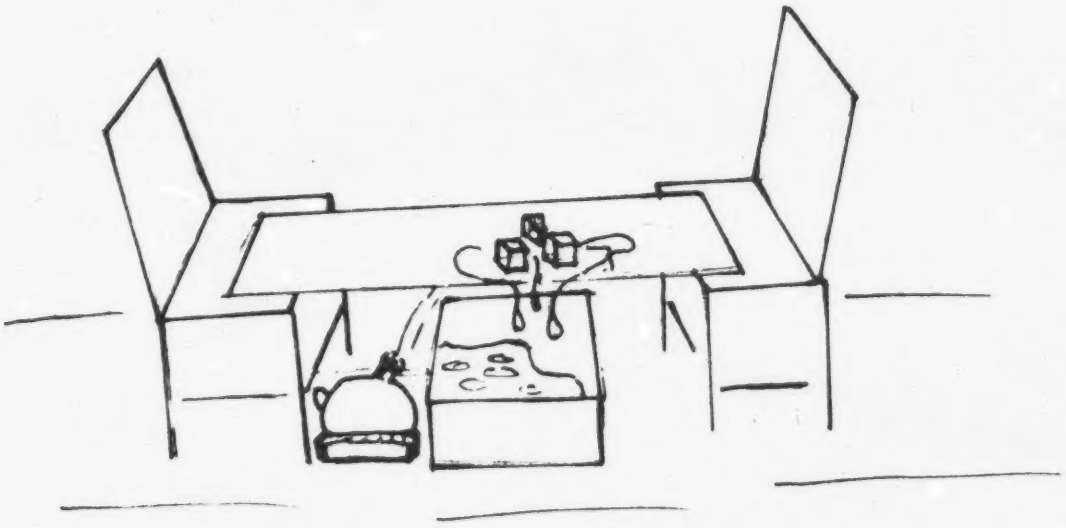
COLPODA

DIDIDUM

# WATER CYCLE

Follow these directions carefully and you will have set up a water cycle.

1. Place a metal tray across two chairs.
2. Put some ice cubes on the metal tray.
3. Put a steaming tea kettle under the tray--off to the side. Keep the kettle steaming by placing it on a hot plate or other safe heating device.
4. Place a box of soil directly under the metal tray. (Half of the soil should be covered with grass or dead leaves, the other half left bare. Thus the effects of raindrop erosion as well as the water cycle will be shown.)



INTERVIEW QUESTIONS FOR A ROLE MODEL

1. What qualifications are necessary for your job?

2. What type of duties do you perform?

3. Where might someone in your field find employment?

4. What type of experience would help you in your work?

5. Is being a_____difficult?

6. Is a college education needed in your job?

7. Do you need to be in good physical condition?

8. Is your work primarily indoors or outdoors?

9. What advantages does your job have?

10. What could a student do now to prepare himself for your type of work?

JOB DESCRIPTIONS

Using this outline and after researching, write two job descriptions in the field of natural resources.

I. Name of Job:

II. Qualifications for Employment:

III. Job Description:

IV. Where Employed:

# FORESTRY SPECIALISTS

Directions: Match the following terms with their descriptions.

1. Dendrology
2. Forest ecology
3. Silviculture
4. Forest protection
5. Forest economics
6. Forest measurements
7. Forest policy
8. Forest administration
9. Resources management
10. Forest resources

____structure and operation of the forest community

____economics and business principles, and problems involved in the management and use of forest resources.

____the characteristics, distribution, and occurrence of trees in forests

____history and current status of Federal, State, and private policies relating to forests.

____forest land management

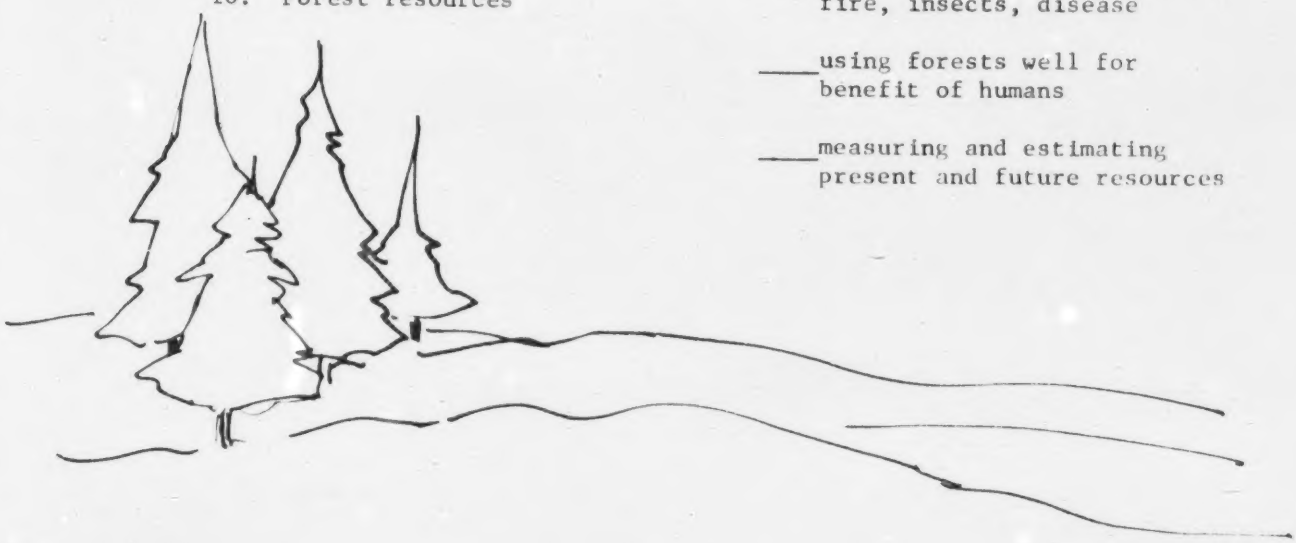
____methods of growing and improving forest crops

____handling problems faced by public and private industries

____methods of fighting against fire, insects, disease

____using forests well for benefit of humans

____measuring and estimating present and future resources



ANSWERS TO (W-17)

1. 2
2. 5
3. 1
4. 7
5. 9
6. 3
7. 8
8. 4
9. 10
10. 6

# VOCABULARY LIST

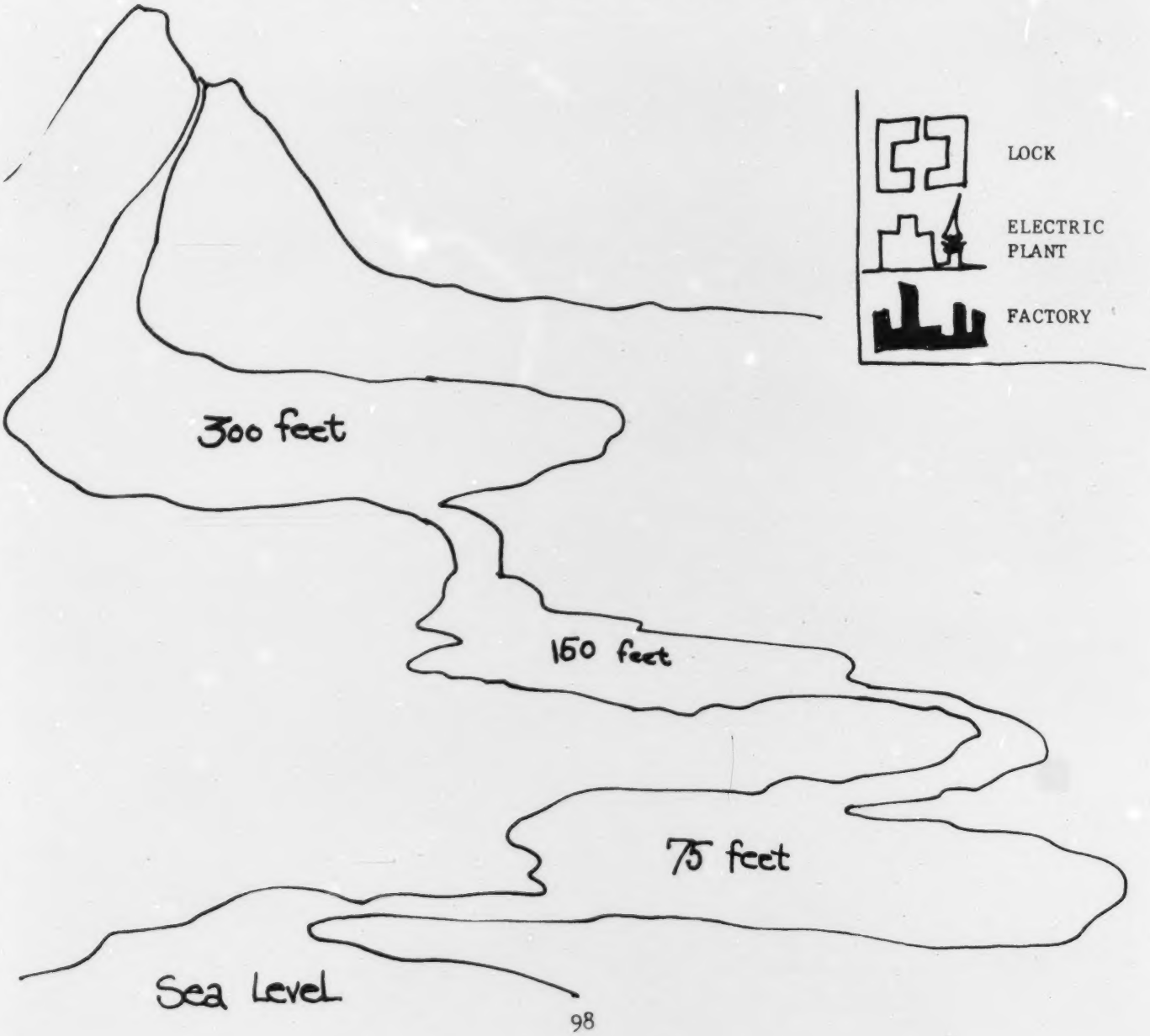
Directions: Put the following words in alphabetical order.

seedling
ranger
technician
watershed
power saw
interdependent
turpentine
silviculture
conservation
forester
resources
shelter
management
recreation
raw materials
economics
nature
devastation
plywood
chemicals
napkins
tissues
resin
naval stores
manufacturing
crown fire
aerial
softwood
wood pulp
by-product
management
dendrology
specialized
production
distribution
tools
equipment
harvesting
potential
administration
cones
seedlings
utility
technology
productivity
environment
flood
fabrics
plastics
wildlife
area
circumference
acre
nursery
employment
hardwood
chemical processes
forage

# PLANNING AN IMAGINARY COUNTRY

Directions: After studying land forms complete the directions below.

1. Decide where locks, electric plants, and factories should be.
2. Draw their symbols on the picture.
3. Tell why you chose those locations.
4. Name some occupations that might be involved in the planning.



LANDSCAPE ARCHITECT

Directions: On a piece of graph paper draw, according to scale, a park area following the directions below.

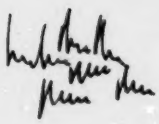
1. Make up a legend for a scale you will use to draw the park. (Example: 1/4" = 1')

2. Plan a park 30 feet wide by 50 feet long. Draw a rectangle on the graph paper to this scale, with these dimensions.

3. Make your plan include six trees, ten shrubs, two picnic tables, cooking area, grass. Make a rough sketch at first, then complete scale drawing on graph paper. Try using the symbols below or create your own.

--shrubs

--trees


--grass

--tables

--cooking area

4. What changes would you make if you wanted to include a playground?

RESEARCH QUESTIONS

Directions: Select and research one occupation in natural resources.

1. What requirements are necessary to obtain this job?

2. What are some of the specific tasks involved in your job?

3. What are the hazards of your job, if any?

4. What is the salary scale?

5. What is the work environment of the job?

6. Is any kind of special clothing or uniform worn on this job?

# NATURAL RESOURCES OF THE FOREST

Directions: Do one or more of the activities below and then explain to the class the importance of the forest products depicted in the project.

1. Trees: Make a poster showing some of the different products that come from trees, for example:

| | | |
|---|---|---|
| fuel | plastics | paper |
| furniture | synthetics | Christmas trees |
| charcoal | telephone poles | fruits |
| explosives | maple syrup | nuts |

2. Water: Draw an air view of the different areas that benefit from the watershed of the forest. (A watershed is the region or section of a forest that contributes to the water supply of a river or a lake.) Your aerial view should show:

| | |
|---|---|
| orchard | hospital |
| farm | school |
| homes | factory |
| gardens | streams |

3. Wildlife: Make a bulletin board of cut-outs of the wildlife that the forest protects.

   Game Animals: deer, rabbits, bears, squirrels
   Fur Bearers: mink, racoon, beaver, muskrat
   Birds: turkey, eagle, pheasant, songbirds, waterfowl

4. Recreation: Make a diorama (box about 6" x 12" or larger) and put in figures and objects such as:

   - campers
   - hunters
   - people fishing
   - people canoeing
   - hikers
   - any other recreational activity that people can enjoy in a forest.

BOOKS (B)


1. Adler, Irving. Coal. New York, Day, 1965.
2. Anderson, C.W. Forest Fires. New York, Mcmillan, 1938.
3. Atwater, Montgomery. The Forest Rangers. Philadelphia, Macrae Smith, 1969.
4. Bauer, Helen. Water: Riches or Ruin. New York, Doubleday, 1959.
5. Buehr, Walter. Underground Riches: The Story of Mining. New York, Morrow, 1958.
6. Blough, Glenn Orlando. Lookout for the Forest. New York, McGraw Hill, 1955.
7. Brooks, Anita. Picture Book of Lumber. New York, Day, 1967.
8. Busch, S. Phillis. Once There Was A Tree. New York, The World Publishing Co., 1968.
9. Carter, Katherine. Trees and How They Grow. Racine, Whitman, 1961.
10. Collins, Patricia. Chains of Life. New York, Doubleday, 1973.
11. Colby, C.B. Tall Timber. New York, Coward-McCann, 1955.
12. Coombs, Charles. High Timber. Cleveland, World Publishing Co., 1960.
13. Davis--Blaugh. Exploring Social Studies. The Region of the Great Lakes. New York, American Book Co., 1971.
14. Dobrin, Norma. About Foresters. Chicago, Melmont, 1962.
15. Dowdell, Dorothy. Tree Farms; Harvest for the Future. New York, Dobbs, 1965.
16. Farb, Peter. The Forest. New York, Time, 1963.
17. Fenton, Carroll L. Riches From the Earth. New York, Day, 1953.
18. Floethe, Louise Lee. The Story of Lumber. New York, Charles Scribner's Sons, 1962.
19. Floherty, John J. Forest Ranger. New York, Lippincott, 1956.
20. Folsom, Franklin. Forest Fire Mystery. New York, Harvey, 1963.
21. Gates, Richard. The True Book of Conservation. Podendorf Laboratory School, University of Chicago, 1959.
22. Gill, Joe. Popeye and Environmental Careers. New York, King Features Syndicate, 1972.
23. Green, Ivah. Conservation. Minnesota, Mandato, 1966.
24. Gringhuis, Dirk. From Fall Timber. Chicago, Whitman, 1964.
25. Grossman, Shelly and Mary Louise. The How and Why Book of Ecology. New York, Grosset and Dunlop Publishing, 1971.
26. Hanaburgh, David H. Your Future in Forestry. New York, Rosen Press, 1961.
27. Harrison, C. William. Conservation: The Challenge of Reclaiming Our Plundered Land. New York, Messner, 1963.
28. Hawkinson, John. The Old Stump. Chicago, Albert Whitman and Co., 1965.
29. Hine, Al. This Land is Mine. New York and Philadelphia, J.B. Lippincott Company, 1965.
30. Hitch, Allen S. Conservation and You. New York, Nostrand, 1964.
31. Hopke, William E. Encyclopedia of Careers and Vocational Guidance. "Foresters." New York, Doubleday, 1967.
32. Hunt, Ronald L. Ecology and Human Resources. Redwood, California, Visual Materials, Inc., 1971.
33. Huntington, Harriet E. Forest Giants. New York, Doubleday, 1962.
34. Hyde, Wayne. What Does a Forest Ranger Do? New York, Dodd, Mead and Co., 1964.
35. Hylander, Clarence J. Trees and Trails. New York, Macmillan, 1958.
36. Keen, Martin. The How and Why Wonder Book of the Microscope and How to Use It. New York, Wonder Book Division of Grosset and Dunlop, 1961.
37. Kieran, John. An Introduction to Trees. New York, Doubleday, 1967.

38. Lauber, Patricia. Our Friend in the Forest. New York; Doubleday, 1959.
39. Life. The Forest. Morristown, New Jersey, Silver Burdett, 1964.
40. Lindquist, Paul D. Science Curriculum Improvement Study, Environment Chicago, Rand McNally Company, 1971.
41. Martin, Bill Jr. Sounds of the Distant Drum. New York, Holt-Rinehart, 1967.
42. Milne, Lorus J. Because of a Tree. New York, Atheneum, 1963.
43. Music for Young Americans. New York, American Book Co., pg. 111.
44. New Music Horizons. New Jersey, Silver Burdett Co., pp. 50-53.
45. Otis, Charles H. Michigan Trees. Ann Arbor, U. of M. Press, 1931.
46. Perry, John. Foresters and What They Do. New York, Watts, Inc., 1963.
47. Platt, Rutherford. Adventures in the Wilderness. New York, American Heritage Publishing Company, 1963.
48. Praeger, Ethel. Michigan--Land of Big Water. Chicago, Illinois, Follett, 1965.
49. Randall, Janet. To Save a Tree. New York, McKay, 1971.
50. Rich, Louise. The First Book of Lumbering. New York, Watts, 1967.
51. Rogers, Matilda. First Book of Tree Identification. New York, Random House, 1951.
52. Selsam, Millicent. Birth of a Forest. New York, Harper, 1964.
53. Selsam, Millicent. Play with Trees. New York, Morrow, 1955.
54. Selsam, Millicent. See Through the Forest. New York, Morrow, 1955.
55. Sheppen, Katherine B. Great Heritage. New York, Viking, 1947.
56. Sidney, Howard (ed.). Agricultural, Forestry and Oceanographic Technicians. Chicago, Ferguson, 1969.
57. Smith, Frances C. First Book of Conservation. New York, Watts, F., 1954.
58. Smith, Norman F. Michigan Trees Worth Knowing. Hillsdale, Educational Publications, 1970.
59. Snedigar, Robert. Life in the Forest. Chicago, Britannica Books, 1962.
60. Tresselt, Alvin. The Dead Tree. New York, Parents Magazine Press.
61. Urell, Catherine. The Big City Book of Conservation. Chicago, Ill., Follett, 1956.
62. Wall, Gertrude. Gifts from the Forest. New York, Charles Scribner's Sons, 1952.
63. Watts, May T. First Guide to Trees. New York, Doubleday, 1964.
64. White, Florence M. Your Friend, the Tree. New York, Knopf, 1969.
65. Wood, Frances E. Forests are for People. New York, Dodd, Mead, 1971.
66. The Social Sciences, Concepts and Values. New York, Harcourt Brace Jovanovich, 1970.

ENCYCLOPEDIAS (E)

1. Comptons Encyclopedias, Encyclopedia Britannica, Inc., William Benton Publisher, 1970.
2. The World Book Encyclopedia. Field Enterprises Educational Corp., 1970. Chicago.
3. Young People's Science Encyclopedia. Childrens Press, Inc., 1962. NY.

FIELD OBSERVATIONS (FO)

1. N. E. Station, Filtration Plant, Eight Mile Rd., near Hoover, Detroit.
2. Stoney Creek Nature Center, 4120 Inwood Rd., Romeo, Michigan. Telephone: 781-4621.

FILMS (F)

1. "Man and His Environment," Consumers Power Co., Jackson, Michigan.
2. "The Rise and Fall of the Great Lakes," Consumers Power Co., Jackson, Michigan.
3. "The River That Came Back," Consumers Power Co., Jackson, Michigan.
4. "When Michigan Was Young," Consumers Power Co., Jackson, Michigan.
5. "Forest, The," Forest Service, U.S. Dept. of Agriculture, Washington, D.C.
6. "Forest Rangers," (11 min.) Encyclopedia Britannica Films, 425 N. Michigan, Chicago, Illinois 60611.
7. "Forests & Conservation," (11 min.) Coronet Instructional Films, 65 E. Southwater, Chicago, Illinois 60601.
8. "Lumber for Houses," (11 min.) Encyclopedia Britannica Films, 425 N. Michigan, Chicago, Illinois 60611.
9. "Lumberman," (22 min.) Frith Films, 1816 N. Highland, Hollywood, California 90028.
10. "Out of the Woods," Forest Service, U. S. Dept. of Agriculture, Washington, D.C.
11. "Pamela's Tree," Forest Service, U.S. Dept. of Agriculture, Washington, D.C.
12. "Saw Timber," (20 min.) Film Originals, Box 4072, Boise, Idaho 83705.
13. "Treasures of the Forest," Coronet Instructional Films, 65 E. Southwater, Chicago, Illinois 60601.
14. "Trees for Tomorrow," American Forest Products, 1835 K Street, N.W., Washington, D.C. 20006.

FILMSTRIPS (FS)

1. "Environment," Career Education Clusters, Westinghouse Learning Corp., 100 Park Avenue, New York, New York 10017.
2. "Detroit: Manufacturing Community," SVE Singer, 1345 Diversey Parkway, Chicago, Illinois 60614.
3. "Farming Today in Michigan," Jam Handy, Scott Education Division, Holyoke, Mass. 01040.
4. "Flagstaff, Arizona: Service Community," SVE Singer, 1345 Diversey Parkway, Chicago, Illinois 60614.
5. "Geography of Michigan," Jam Handy, Scott Education Division, Holyoke, Mass. 01040.
6. "Lumbering Era in Michigan 1860-1900," Michigan Historical Community.
7. "Lumbering, Eye Gate, 146-01 Archer Avenue, Jamacia, New York 11435.
8. "Manufacturing Today in Michigan," Jam Handy, Scott Education Divison, Holyoke, Mass. 01040.
9. "Michigan--Water Wonderland," Jam Handy, Scott Education Division, Holyoke, Mass. 01040.
10. "Natural Resources of Michigan," Jam Handy, Scott Education Division, Holyoke, Mass. 01040.
11. "Forest Conservation Today," Society for Visual Education, Inc., 1346 Diversey Parkway, Chicago, Illinois 60414.
12. "Life Cycle of Trees," Imperial Film Industry, Lakeland, Florida.
13. "Our Forests," Coronet Films, 65 E. Southwater, Chicago, Illinois 60601.

FILMSTRIPS (FS) (cont.)

14. "Trees and Living Environment," Imperial Film Industry, Lakeland, Florida.
15. "Trees and Physical Environment," Imperial Film Industry, Lakeland, Florida.
16. "Trees: Earth's Largest Life Farms," Imperial Film Industry, Lakeland, Florida
17. "Trees: How They Grow," Coronet Films, 65 E. Southwater, Chicago, Illinois 60601.
18. "Trees: The Different Kinds," Coronet Films, 65 E. Southwater, Chicago, Illinois 60601.
19. "Trees: Their Importance," Coronet Films, 65 E. Southwater, Chicago, Illinois 60601.
20. "Trees: Their Products," Coronet Films, 65 E. Southwater, Chicago, Illinois 60601.
21. "Trees: Their Structure," Coronet Films, 65 E. Southwater, Chicago, Illinois 60601.
22. "Wildlife Conservation Today," Society for Visual Education, 1345 Diversey Parkway, Chicago, Illinois 60414.

RECORDS (R)

1. "Johnny Appleseed-Paul Bunyan," Caedman Records, 505 Eighth Avenue, New York, New York 10018.
2. "Story of Lumber"--in songs and rhythm the story of lumber is told. Phoebe James Rhythm Records, Box 904, Mentone, California 92359.
3. "Timber-r-r"--story of logging industry. Young People's Records, 100 Sixth Avenue, New York, New York 10013.

OCCUPATIONAL ROLE MODELS (ORM)

1. Consumer Power Co.--Conservationist
2. Stoney Creek Nature Center--Park Ranger, 4120 Inwood Road., Romeo, Michigan Telephone: 781-4621.

VERTICAL FILE MATERIAL (VFM)

COAL

1. "Class Report--Coal" National Coal Association, Education Division, Coal Building, Washington, D.C. 20036.
2. Map of Coal Areas in the United States
3. Reprint of Coal article from World Book Encyclopedia.

CONSERVATION--FORESTRY ACTIVITIES

1. Forestry Activities--A Guide for Youth Group Leaders. Forest Service, U.S. Department of Agriculture, Washington, D.C. 20036.
2. Concepts of Conservation--The Conservation Foundation, 30 East 40th Street, New York, New York.
3. Danger in the Air--U.S. Department of H.W.W., 330 Independence Avenue, Washington, D.C. 20250.
4. Elementary Unit for 3rd and 4th Grade--Careers in Conservation--Macomb Int. School District, 4401 Garfield Rd., Mt. Clemens, Michigan 48043.
5. Electricity in the World Around Us. Consumers Power Co., 212 West Michigan Avenue, Jackson, Michigan 49201.

VERTICAL FILE MATERIAL (VFM) (cont.)

CONSERVATION--FORESTRY ACTIVITIES (cont.)

6. Estauaves--America Most Vulnerable Frontiers--National Wildlife Fed., 1412 16th Street, N.W., Washington, D.C. 20036.
7. Grass Makes It's Own Food--U. S. Department of Agriculture, 14 Street and Independence Avenue, S.W., Washington, D.C. 20260.
8. More Wildlife Through Soil and Water Conservation--U.S. Department of Agriculture, 14th Street and Independence Ave., S.W., Washington D. C. 20250.
9. Habitat Improvement--National Wildlife Federation, 1214 16th St., N.W., Washington, D.C. 20036.
10. Plants as Makers of Soils--National Audubon Society, 1130 Fifth Ave., New York, New York.
11. Teaching Conservation Through Outdoor Education Areas--U.S. Department of Agriculture, 14 Street and Independence Ave., S.W., Washington, D.C. 20250.
12. Teaching Soil and Water Conservation--U. S. Department of Agriculture, 14th Street and Independence Ave., S.W., Washington, D.C. 20250.
13. The Glory Trail--National Wildlife Federation, 1412 16th St., N.W., Washington, D.C. 20036.
14. Wildlife Preserves--National Audubon Society, 1130 Fifth Ave., New York, New York.

NATURAL RESOURCES

1. Natural Resources in the City--National Audubon Society, 1130 Fifth Ave., New York, New York.

FORESTS

1. Forests and Trees of the U.S.--(Chart) American Forests Products Ind., 1835 K Street, N.W., Washington, D.C. 20036.
2. It's a Tree Country--American Forests Products Industries, Inc., 1835 K Street, N.W., Washington, D.C. 20036.
3. Michigan Conservation: Forests--Warren Community Resources Workshop.
4. Why We Must Have Tree Farming--American Forest Products Industries, Inc., 1835 K Street, N.W., Washington, D.C. 20036.

# Appendix K

NOT FOR REPRODUCTION

PROJECT CARE
WARREN CONSOLIDATED SCHOOLS

# OCCUPATIONS

IN THE

# STOCK MARKET

MRS. JEANETTE A. LEWIS
Hartsig Jr. High

MICHAEL S. SHIBLER

TERRY TURK

Secondary Career Development Specialists

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## UNIT RATIONALE

The purpose of this unit is to acquaint the student with the occupational cluster, Office and Business; specifically, the stock market. Since the stock market plays such a vital role in our economy, it is important that the students understand its operation and the role its employees play.

The student will have an opportunity to see the worker as an important human being who fulfills many roles in life (citizen, family member, etc.). The student should understand that the usual stereotyping of male-female work roles is not realistic in today's society.

Emphasis is to be placed on the careers in the stock market through:

-- a career oriented program

-- role playing

-- use of occupational role models

-- field observations

-- integrated curriculum

-- parent participation

-- hands-on activity

## TEACHING PROCEDURES

This unit is designed to teach the skills necessary for understanding the operation and function of the stock market, while acquainting students with career possibilities in this field.

The unit is specifically designed for eighth grade American History, but could readily be adapted to a business course or a high school economics course.

The teacher will determine the length of the unit. It should range from two to four weeks, based on student interest and method of presentation. It may be advisable to arrange in advance for occupational role models and field observations in order to insure availability during implementation of the unit.

Addresses for ordering free materials, packet of materials from the New York Stock Exchange, and films are included in the bibliography.

Annual reports and company history may be obtained from many companies upon request. Addresses of companies can be obtained from advertisements and indexes such as Moody's and Standard and Poor's.

Reference made to resources used in this unit are based on the following key:

| | |
|---|---|
| Books | (B) |
| Films | (F) |
| Student Worksheets | (W) |
| Teacher Reference Materials | (TRM) |
| Teacher Worksheets | (TW) |

## MAJOR AND SUB-GOALS OF THE UNIT

Major Goal of the Unit -- The student will become aware of the importance of the occupations in the stock market by learning the operation of the stock market and the role it plays in our economy.

A. The student will become aware of the Contributions of the corporate structure to the American economy.

B. The student will become aware of the Work Performed by those employed in the stock market.

C. The student will become aware of the Personnel and Jobs involved in the stock market.

D. The student will become aware of the Job and Occupational Environment of careers in the stock market.

E. The student will become aware of the Qualifications necessary for employment in the stock market.

PRE-TEST

1. Name as many stock market workers as you can and state the amount of education needed for each of the jobs you list.

2. Make a list of personal characteristics that would be required for workers in the stock market.

3. Itemize three types of bonds.

4. What are two kinds of stock?

5. Write a paragraph that explains the differences between; partnership, sole proprietorship, and a corporation.

MAJOR GOAL OF THE UNIT -- The student will become aware of the importance of occupations in the stock market by learning the operation of the stock market and the role it plays in our economy.

A. The student will become aware of the Contributions of the corporate structure to the American economy.

| PERFORMANCE OBJECTIVES | SUGGESTED TECHNIQUES/ACTIVITIES | RESOURCE MATERIALS |
|---|---|---|
| I. Given an opportunity to read, discuss, and participate in simulated activities, the student will demonstrate his awareness of the corporate structure by defining ten related terms. | A. Read and discuss pgs. 2-6, "Types of Business Organizations." | You and the Investment World (B-5) |
| | B. Define terms 1-10. | W-1 |
| | C. Analyze a financial report from "The National Dairy Products Corporation." | pg. 6 (B-5) |
| | 1. Determine number of shareowners.<br>2. Determine total income and profit before taxes.<br>3. Determine dividend. | |
| | D. Play "Company Financing Simulation" game. | TW-1 and 2, W-2 and 3 |
| | E. Take Matching Test. | pg. 6 (B-5) |
| | F. Call in a Junior Achievement representative to explain the program. | Local Chamber of Commerce |
| | G. Design a bulletin board on the "Organization of a Corporation." | |

A. The student will become aware of the Contributions of the corporate structure to the American economy.

| PERFORMANCE OBJECTIVES | SUGGESTED TECHNIQUES/ACTIVITIES | RESOURCE MATERIALS |
|---|---|---|
| | H. List advantages and disadvantages of starting a business as a:<br>1. sole proprietorship<br>2. partnership<br>3. corporation | |
| II. After reading, discussing, and investigating a local securities company, the student will exemplify his awareness of how our capitalistic methods contribute to our free society by writing a two page essay. | A. View a film. | "Your Share in Tomorrow" (F-9) |
| | B. Read and discuss "Capital in our Economy." | pgs. 33-39 (B-5) |
| | C. Prepare a group report germane to a particular company. General guidelines will include:<br>1. From where did the capital come?<br>2. What are the sources of a new capital today?<br>3. What are the prospects for raising capital in the future? | |
| | D. Take Short Answer Test. | pg. 39 (B-5) |
| | E. Write a paper discussing the following: It has been stated that political freedom is impossible without economic freedom. Do you agree? Give reasons for your conclusion. | |

B. The student will become aware of the Work Performed by those employed in the stock market.

| PERFORMANCE OBJECTIVES | SUGGESTED TECHNIQUES/ACTIVITIES | RESOURCE MATERIALS |
|---|---|---|
| I. After completing a reading assignment, the student will demonstrate his knowledge of the various stocks and bonds by defining five terms. | A. Read the chapter "Stocks & Bonds." | pgs. 8-10 (B-5) |
| | B. Define terms 11-15. | W-1 |
| | C. Study school bonding. | |
| II. Through reading, discussion and performing the activities listed, the student will illustrate his awareness of the work performed by a broker in the buying and selling of stocks by computing commission and playing a simulation game. | A. Read and discuss material about the broker. | pgs. 17-21 (B-5)<br>TRM-4 |
| | B. Define terms 16-19. | W-1 |
| | C. Discuss and add terms 20 and 21 to definition list. | W-1 |
| | D. View a film. | "How Stocks are Bought and Sold" (F-3) |
| | E. Show actual stock and bond certificates to the class. | TRM-3 a and f |
| | F. Compute the commission a broker would receive. | W-4 |
| | G. Participate in a simulation game - Bulls and Bears. | TW-3, W-5 |

B. The student will become aware of the Work Performed by those employed in the stock market.

| PERFORMANCE OBJECTIVES | SUGGESTED TECHNIQUES/ACTIVITIES | RESOURCE MATERIALS |
|---|---|---|
| III. After studying financial statements of several companies, the student will demonstrate his awareness of the items included by listing four kinds of information that can be found in an annual report. | A. Write letters to companies for financial statements. | Statements may be available in the library if time doesn't permit waiting for replies from letters. |
| | B. Study and discuss financial statements. | TRM-3 i. |
| IV. After studying the newspaper listings and financial publications, the student will demonstrate hiw knowledge of available resources by listing four financial publications. | A. Participate in a group discussion relative to newspaper listings for the New York Stock Exchange; include the following: company name, pf, rate of annual dividend, sales 100s, first, high, low, last, net change. | TRM-3 |
| | B. Select one stock and follow it. | W-6 |
| | C. Examine financial publications:<br>1. Wall Street Journal<br>2. Business World<br>3. Newspaper, etc. | Library |
| | D. Examine samples of ticker tape and learn what their symbols mean. | TRM-6 and pg. 17 (B-5) |

B. The student will become aware of the Work Performed by those employed in the stock market.

| PERFORMANCE OBJECTIVES | SUGGESTED TECHNIQUES/ACTIVITIES | RESOURCE MATERIALS |
|---|---|---|
| V. By participating in a simulation game, the student will exemplify his awareness of the work performed by personnel in the stock exchange by actually performing their duties. | A. Participate in a simulation game. | TW-3, W-5 |
| | B. Write an evaluative essay, identifying the informative and the non-informative activities in the simulation game. | |

MAJOR GOAL OF THE UNIT -- The student will become aware of the importance of the occupations in the stock market by learning the operation of the stock market and the role it plays in our economy.

C. The student will become aware of the Personnel and Jobs involved in the stock market.

| PERFORMANCE OBJECTIVES | SUGGESTED TECHNIQUES/ACTIVITIES | RESOURCE MATERIALS |
|---|---|---|
| I. Through reading, research, and lecture, the student will demonstrate his understanding of the history and organization of the New York Stock Exchange by listing ten jobs inherent in its structure. | A. Read and discuss the history of the New York Stock Exchange. | pgs. 11-15 (B-5) |
| | B. Research the Securities Acts of 1933 and 1934. | |
| | C. Listen to a lecture related to the organization of the N. Y. Stock Exchange and jobs available. | "Understanding the N. Y. Stock Exchange" TW-4 (B-3 j) |
| | D. List jobs available (those mentioned by teacher) and brainstorm what clerical positions would be available. | |
| II. After studying the organization of the N. Y. Stock Exchange and a simulation activity, the student will communicate his awareness of the personnel necessary to execute a stock order, by listing the jobs in the sequence the stock order follows. | A. Design a bulletin board showing the floor of the N. Y. Stock Exchange indicating jobs and locations, i.e., clerk, floor brokers. | pg. 7 (B-5) |
| | B. Outline the steps taken to execute an order on the N. Y. Stock Exchange. | pg. 19 (B-5) |
| | C. View a film. | "Lady and the Stock Exchange" (F-5) TW-5 and 6, W-6 and 7 |
| | D. Participate in a simulation game - Stock Market Game. | |
| | E. List the people that are necessary to execute an order on the stock exchange. | |

D. The student will become aware of the Job and Occupational Environment of careers in the stock market.

| PERFORMANCE OBJECTIVES | SUGGESTED TECHNIQUES/ACTIVITIES | RESOURCE MATERIALS |
|---|---|---|
| I. After viewing a film, and listening to a role model, the student will demonstrate his knowledge of the occupational environment of the stock market by writing a summary of the role model's presentation. | A. View a film.<br>B. Listen to a role model's presentation related to occupational environment.<br>C. Write an essay summarizing the role model's presentation. | "Behind the Ticker Tape" (F-1)<br>TRM-6 |
| II. Following a field trip and discussion, the student will communicate his awareness of the interrelatedness and interdependence of the field offices to the N. Y. Stock Exchange by writing an essay. | A. Participate in a field trip (culminating activity) to Watling, Lerchen & Co.<br>B. Discuss impressions.<br>C. Write a paragraph describing how this stock office is related to the N. Y. Stock Exchange. | TRM-6 |

E. The student will become aware of the Qualifications necessary for employment in the stock market.

| PERFORMANCE OBJECTIVES | SUGGESTED TECHNIQUES/ACTIVITIES | RESOURCE MATERIALS |
|---|---|---|
| I. After listening to a role model, the student will indicate his knowledge of the educational preparation necessary for jobs by listing the minimal educational requirements for five occupations. | A. Invite an occupational role model to speak to the class. Discussion will cover:<br>1. educational qualifications<br>2. chances for advancement<br>B. List educational requirements for:<br>1. securities salesmen<br>2. specialists<br>3. dealers<br>4. floor clerks, etc. | TRM-6 |
| II. After brainstorming the student will demonstrate his awareness of the personal characteristics germane to those who work in the stock market by listing five characteristics. | A. Brainstorm to list ten personal qualifications necessary for employment within the structure of the stock market.<br>B. Identify five personal characteristics related to occupations mentioned in the above list. | |

POST-TEST

1. What are the names of two kinds of stock?

2. Name three types of bonds.

3. List workers in the stock market and the amount of education required for the various jobs.

4. Itemize personal traits necessary for employment in the stock market industry.

Write the definitions for these terms:

1. proprietor
2. partnership
3. corporation
4. profit
5. investment banking firm
6. capital
7. syndicate
8. dividends
9. board of directors
10. S. E. C.
11. common stock
12. preferred stock
13. government bonds
14. municipal bonds
15. corporate bonds
16. at the market
17. limit order
18. odd lots
19. round lots
20. margin buying
21. short selling

# B & C SNOW REMOVAL COMPANY

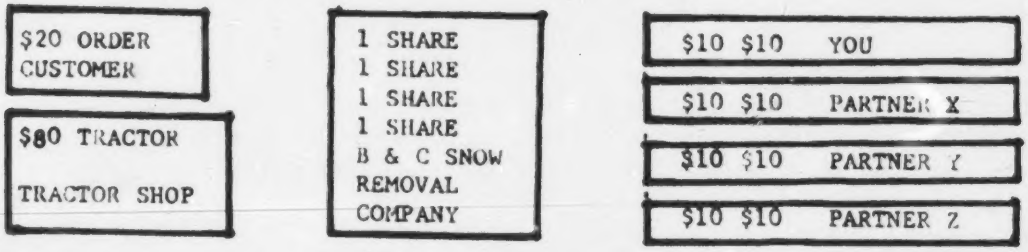
1. You and three of your friends have agreed to start a snow removal company. To make sure that everything is divided fairly, you have split the company into four equal shares.

2. You know a possible customer who may place a $20 order for 2 months to get you started.

3. You and your friends each have $20. You know a tractor shop where you can get a used tractor for $80.

   Cut out the markers at the end of this worksheet.

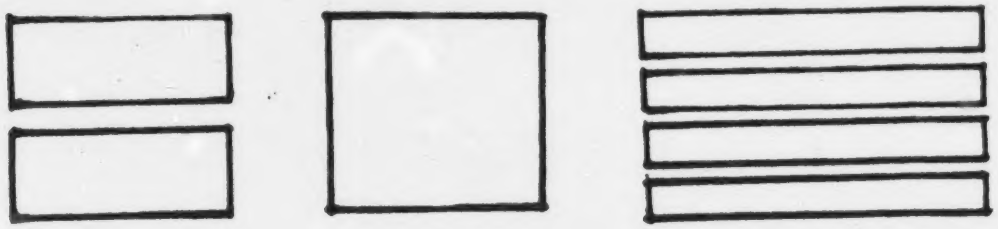
4. Start the game. Place the markers on the Stock Flow Diagram the way they are shown here:




5. Then, move your markers to show these things happening.

   A. You put $20 into the company.
   B. Partner X puts $20 into the company.
   C. Partner Y and partner Z decide to join, also Z pays Y $20 that he owes him.
   D. You and X take 2 shares of stock each (shares are $10 each).
   E. You and X buy the $80 tractor, using money from the company treasurer. The tractor now belongs to the company.
   F. The customer places his $20 order. The order now belongs to the company.
   G. You don't want to remove snow yourself, so you and X agree that he will take $10 out of the treasury and he will do the snow removal.

6. Write in the positions of the markers at the end of the seven steps:



7. How much is the company worth now? (Count cash, property, and orders in company square only.)

_____

8. Everything that the company owns is still divided into four shares of stock. How much is each of the shares worth now?

_____

9. If Partner Y decides to join after all and wants to buy your two shares, what is a fair price to charge him?

_____

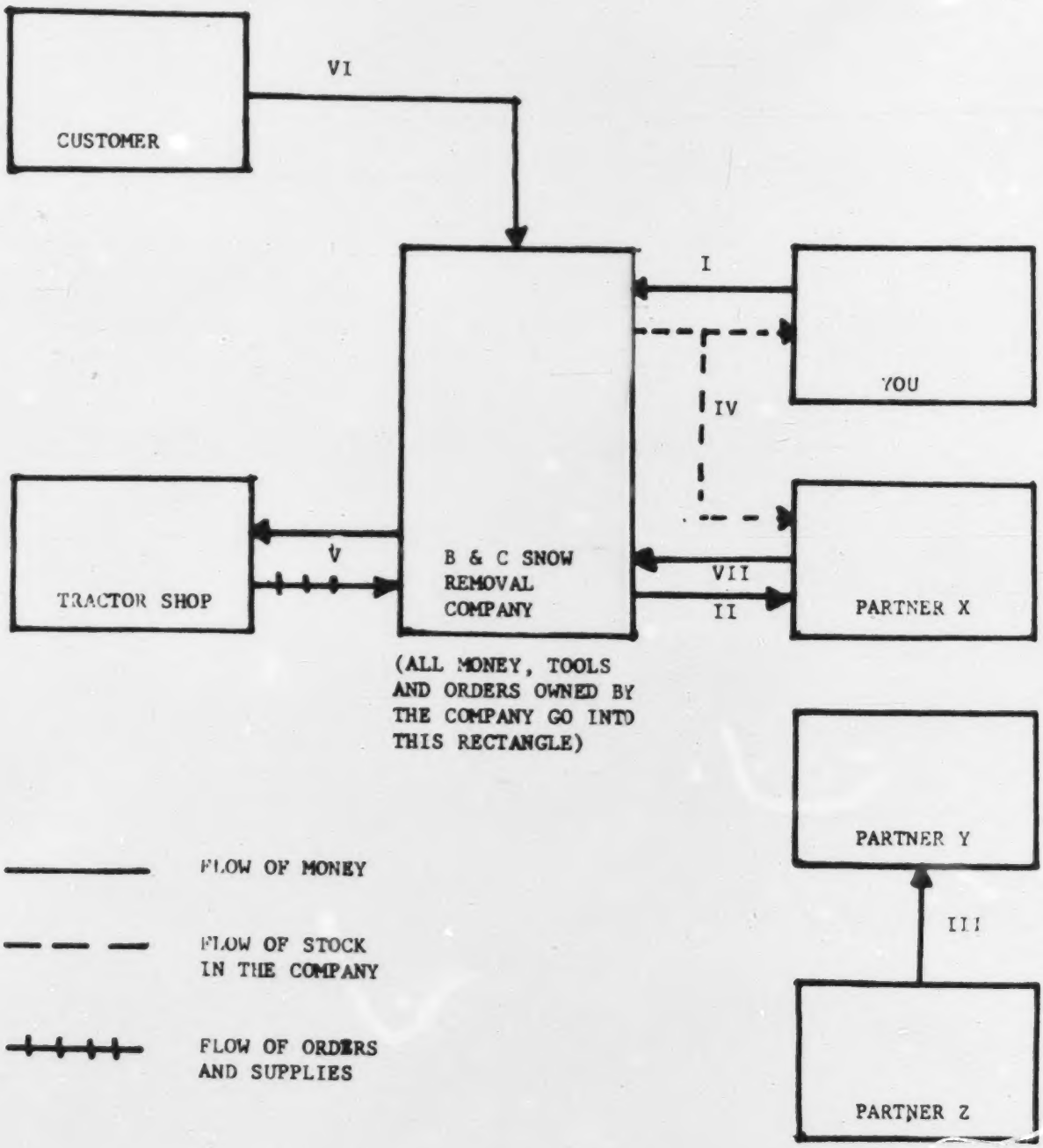
10. If you quit the company and sell your two shares to Y at that price, how much have you gained (+) or lost (-) since the game started?

_____

**CUT OUT THESE MARKERS**

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 SHARE | | 1 SHARE | | 1 SHARE | | 1 SHARE |
| $20 ORDER | | | $80 MOWER | | | |
| $10 | $10 | $10 | $10 | $10 | $10 | $10 |

STOCK FLOW DIAGRAM
(FOLLOW THE NUMBERED STEPS IN SEQUENCE)



Directions: Read the six items below before computing a., b., and c.

Commissions on the first 1,000 shares of an order are figured on the following basis for each 100 shares.

1. On a purchase or sale between $100.00 and $399.99, 2 percent plus $3. The minimum commission is $6.

2. On a purchase or sale between $400.00 and $2,399.99, 1 percent plus $7.

3. On a purchase or sale from $2,400.00 to $4,999.99, one-half of one percent plus $19.

4. On a purchase or sale amounting to $5,000.00 or more, one-tenth of one percent plus $39, provided that amount does not exceed $75 per 100 share transaction.

5. On an odd lot purchase or sale involving $100.00 or more, the commission is the same as in the above schedule, less $2, with a $6 minimum.

6. On a transaction involving less than $100.00, the commission can be any amount agreed upon by the firm and the customer. On MIP transactions of $100.00 or less, the charge is 6 percent.

Using the above table, compute the commission a broker would receive for each of the following three purchases of stock listed with the New York Stock Exchange.

a. 100 shares @ $31.00 per share

b. 100 shares @ $3.87 1/2 per share

c. 100 shares @ $57.62 1/2 per share

# BULLS AND BEARS

## SELLING SOMETHING THAT YOU DO NOT OWN

1. You meet someone who is willing to pay you $900 today if you will promise to deliver a motorcycle to him in one month or less. You do not own the motorcycle.
   The price of the motorcycle today is $900 from a dealer.

2. You have heard about a motorcycle sale that is coming, and you think that the price of this motorcycle will drop to $700 next month. You can agree to get the motorcycle for him. He will pay you $900; in a month you can buy the motorcycle for $700 and sell it to him.

3. How much money would you gain if your plans worked? _____

4. Suppose that the price of the motorcycle stayed at $900. Then how much money would you gain? _____

5. Suppose that the price went up to $1,500 instead of dropping. And suppose that you stuck to your agreement. How much would you lose? _____

6. This idea of selling something before you buy it is often used in the selling and buying of stocks. To see how this is done, follow these instructions:

   Toss a die: _____ Multiply the number by 50: _____
   This is the price of a share of stock in WHEELS AUTOMOTIVE.
   Do you want to buy or sell? (check one)
   BUY _____ SELL _____

7. Second toss of die: _____ Multiply the number by 50: _____
   This is the later stock price for WHEELS AUTOMOTIVE.
   If you SOLD earlier, you must BUY now.
   If you BOUGHT earlier, you must SELL now.

   Your selling price: +$ _____
   Your buying price: -$ _____
   Your gain or loss: $ _____

8. Someone who sells stocks first and buys them later in order to "deliver" them is called a "Bear." He thinks that prices are going down.

9. Someone who buys stocks first and sells them later is called a "Bull." He thinks that prices are going up.
   Were you a Bull or Bear in WHEELS AUTOMOTIVE?
   Bull _____ Bear _____

10. Now, you are going to buy and sell shares in WHEELS AUTOMOTIVE many times. Each time, you must decide whether to be a Bull or a Bear.

11. Each time you play the game, write the stock price for your first toss in either the "Sell" or "Buy" box. You must make the opposite choice when you write the stock price for your second toss. If you play more games than spaces provided, you will need to draw additional "Sell" or "Buy" boxes.

| | $50 X First Toss | $50 X Second Toss |
|---|---|---|
| BUY | | |
| SELL | | |

Gain (+) or Loss (-): $ _____
Bull _____
Bear _____

| | $50 X First Toss | $50 X Second Toss |
|---|---|---|
| BUY | | |
| SELL | | |

Gain (+) or Loss (-): $ _____
Bull _____
Bear _____

| | $50 X First Toss | $50 X Second Toss |
|---|---|---|
| BUY | | |
| SELL | | |

Gain (+) or Loss (-): $ _____
Bull _____
Bear _____

Add your gains (as positive numbers) and losses (as negative numbers) to see how much you won or lost on Wheels Automotive.

Total Gain (+) or Loss (-): $ _____

# STOCK MARKET GUIDE

1. You are going to "play the stock market." You will be buying and selling stocks in hopes of making a profit.

2. Look at the Stock Market Board for weeks 1 through 10.
   The number for each week for each company is the value of the stock in dollars.
   For example, the value of one share of Volt Electronic in week 5 is $140.

3. You pick any company you wish to invest in, using "bull" or "bear" tactics.
   You will make one transaction a week starting with week 10.
   You will buy or sell only one share each week for 9 weeks.

4. You must now decide if you wish to buy or sell stock in the tenth week.
   If you buy, write a - and the stock value in the space on the Stock Exchange Worksheet for your company for week 10.
   If you sell, write a + and the stock value in the space for your company for week 10.

5. You will now follow your company for 9 weeks.
   You can either buy or sell each week.
   Enter - or + and the stock value each time you buy or sell.
   In the 19th week you must balance your selling and buying.

6. Make your entries as each week is shown.
   Make sure you record the values for your stock.

7. After week 18 is completed, count the number of times you sold and bought stock.
   Number of times
   (+) Sold _____
   (-) Bought _____

8. You must balance your stock in week 19.
   Example: If you sold (+) stock three times and bought (-) stock six times, you must sell (+) three shares of stock in week 19.

9. Enter the + or - number of stocks in the "N" column for your company.

10. Enter the value of your stock for week 19.

11. You must now total all of your transactions, including week 19. (The number of transactions for week 19 is the number in the "N" column times the value for week 19.)

    TOTAL STOCK TRANSACTIONS

    (+) Sold $ _____
    (-) Bought $ _____

    If the Sold (+) numbers are greater, enter your cash balance here $_____.
    If the Bought (-) numbers are greater, enter your cash deficit here $ _____.

STOCK EXCHANGE BOARD
I
PAST PERFORMANCE

| Stock | WEEKS 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Bronze Copper | 10 | 12½ | 13 | 11½ | 15 | 16 | 15 | 14½ | 14½ | 15 |
| C & D Shipping | 20 | 13 | 16 | 13 | 16 | 15 | 15 | 13½ | 13 | 13 |
| Lens Photocopy | 7 | 12½ | 10½ | 8 | 9 | 12 | 12 | 10½ | 12 | 12½ |
| Metro-Data Corp. | 100 | 140½ | 129 | 136 | 140 | 135 | 149 | 161 | 151 | 151 |
| Sour Coffee | 87½ | 100 | 93 | 108½ | 110½ | 107 | 111½ | 118 | 112½ | 106 |
| Volt Electric | 150½ | 147 | 141 | 128 | 140 | 122 | 120½ | 133 | 130 | 123½ |
| Tools Inc. | 65½ | 50 | 56 | 59 | 56½ | 54 | 58 | 60 | 52 | 54 |
| Good-Deal Motors | 35 | 43 | 47 | 49½ | 49 | 48 | 50 | 58 | 56 | 54½ |
| Nic Int. | 100 | 112½ | 98½ | 107 | 120 | 116 | 123 | 136 | 137½ | 129½ |

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M-7

# COMPANY FINANCING SIMULATION

Overview: The concept of financial holdings and financial potential being represented by shares of stock is introduced to the class through the example of partners in a small snow removal enterprise.

The shares of stock represent capital goods (a snow removal tractor), cash holdings, and contracts. Each student plays at an individual game board on which goods, money, contracts, and stock shares are moved on the board to simulate transactions.

The complex principles of multiple investment may be included at any level of business. While this simulation does not attain the complexities of a large company, the student will be exposed to the basic principles of shares and profit sharing. Students may be encouraged to apply these principles to possible jobs, such as snow removal, car washing, baby sitting, etc.

Suggestions:

1. Hand out Snow Removal Company worksheets and Stock Flow Diagram. (W-2 and 3)

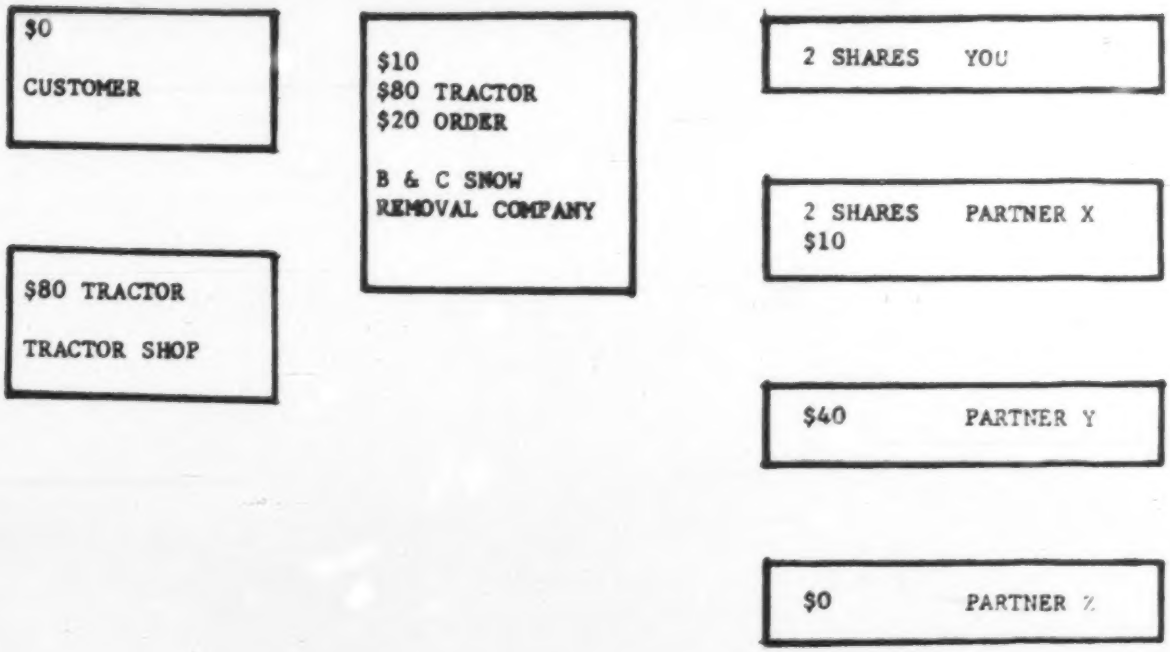
2. An answer sheet is provided for the teacher to hand out after the students have completed the simulation. (TW-2)

3. At the completion of the simulation, applications of the simulation principles to jobs should be discussed.

TEACHER'S KEY
(B & C SNOW REMOVAL COMPANY)

Answers to W-2.

6. WRITE IN THE POSITIONS OF THE MARKERS AT THE END OF THE SEVEN STEPS:




7. How much is the company worth now? (Count cash, property, and orders in company square only.) $110.

8. Everything that the company owns is still divided into 4 shares of stock. How much is each of the shares worth now? $27.50

9. If Partner Y decides to join after all and wants to buy your two shares, what is a fair price to charge him? $55.

10. If you quit the company and sell your two shares to Y at that price, how much have you gained (+) or lost (-) since the game started? +$35.

# OVERVIEW OF BULLS AND BEARS SIMULATION

1. In this activity, the students will learn more about shares of stock in preparation for the later stock market activities. Each student will simulate the buying and selling of stocks in a fluctuating market.

2. The emphasis in this game is on the methods employed in buying stocks at low prices and selling them at high prices.

   Another idea conveyed is that a person has the ability to sell stocks that he does not own, if he commits himself to buying them later in order to fulfill the transaction.

3. First, the students will carry out an exercise in which they sell a motorcycle that they do not currently own. Later, they must buy the motorcycle in order to deliver it. This transaction is carried out on the basis of a predicted fall in the price, so that the player's selling price will exceed his buying price. This is known as "selling short."

4. People who sell short on the stock market are referred to as "bears." The "bulls" of the stock market follow the more traditional policy of buying first and then selling on the assumption that the market is rising. The student plays bull and bear roles as he represents fluctuating stock prices by the toss of a die, in the main sequence of this simulation.

5. Hand out instructions and worksheets to all students. Each student should be given a single die. (W-5)

# ORGANIZATION OF THE STOCK MARKET

I. Membership in the Exchange includes 219 member firms or corporations and 353 member partnerships.

A. Commission Houses
1. Do business with the public.
2. Execute customer's orders to buy and sell on the Exchange.
3. Receive commissions on those transactions.

B. Specialist - Specializes in "making a market" for one or more stocks.
1. Risks his own capital by buying at a higher price or selling at a lower price than the public may be willing to pay.
2. The specialist may act for other brokers for he remains at one post; he then receives part of the commission.
3. He cannot buy for his own account until he executes all public orders.

C. Odd-lot Dealers
1. Serve investors who purchase or sell a few shares at a time.
2. Act as dealers, not brokers - buy and sell odd lots to brokers.

D. Floor Brokers
1. Assist commission house brokers.
2. Receive a commission from the house brokers.

E. Registered Traders
1. There are 45 in number.
2. Trade for their own accounts while on the floor.

II. Board of Governors - elected by the members.

A. Three representatives of the public - have no direct connection with the securities business.

B. President of the Exchange -
1. Selected by the Board of Governors.
2. May not be a member of the Exchange.

C. Remaining members include members and allied members from all sections of the country.

III. Exchange employs 2,900 people, 700 of whom work on the floor.

A. Department of Stock List - examines corporations requesting listing.

B. Department of Member Firms - administers rules and policies regarding conduct and financial condition of member firms.

C. Public Relations and Investor Services - interpret the Exchange's functions to the public.

D. Floor department - administers rules regulating trading.

IV. Jobs connected to Market Data System.

A. Fully automated.

B. Jobs involve working with operation of machines: ticker tape, card readers, etc.

V. Offices across the Nation - 145,000 people employed.

# STOCK MARKET GAME

Overview: Each student will simulate the buying and selling of stocks in a volatile market.

The students will follow the prices listed on a "stock exchange board" in order to make decisions regarding the sale and purchase of stock.

The goal of these transactions is for each student to try to increase his profit by selling high and buying low; however, he will face uncertain results because of the unpredictable factors in market fluctuations.

Suggestions:

1. Hand out the Stock Market Guide. (W-6)

2. Hand out Stock Exchange Board I to the students. (W-7)

3. After all students have completed Step 4 of the Stock Market Guide Worksheet, project Stock Exchange Board II (TW-6) on a screen using an overhead projector with only week II showing. (Mask the remaining weeks.)

4. As students record stock sales and purchases, expose each week individually. After week 18 is exposed, students must complete Step 9 of the Stock Market Guide Worksheet, before week 19 is exposed.

5. After all computations are completed, ask how many students had gains and how many had losses.

6. Collect all worksheets for use on the second day of the game.

STOCK EXCHANGE BOARD
II
CURRENT PERFORMANCE

| | WEEKS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Stock | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| Bronze Copper | 14 | 14 | 13 | 14 | 15 | 16 | 16 | 15½ | 16 |
| C & D Shipping | 12 | 14 | 14½ | 15 | 16 | 16 | 16 | 15 | 15 |
| Lens Photocopy | 12 | 12½ | 12 | 14½ | 14½ | 15 | 16 | 16 | 16½ |
| Metro-Data Corp. | 141½ | 153½ | 161 | 165 | 159 | 146 | 140 | 140 | 143 |
| Sour Coffee | 109½ | 113½ | 113½ | 112 | 114 | 113 | 109½ | 103 | 106 |
| Volt Electric | 120 | 135 | 139½ | 131 | 129 | 123 | 124 | 124½ | 124 |
| Tools Inc. | 51 | 55 | 55 | 51 | 56 | 56 | 59 | 61½ | 63 |
| Good-Deal Motors | 54 | 61 | 60 | 62 | 66 | 61 | 62 | 59 | 58½ |
| Nic Ind. | 124 | 136 | 134 | 138 | 140 | 130 | 139 | 135 | 144 |

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BIBLIOGRAPHY

BOOKS (B)


1. Brindze, Ruth. Investing Money: The Facts About Stocks and Bonds. Chicago, Harcourt, Brace, Jovanich, Inc., 1968.
2. Low, Janet. Understanding the Stock Market. Boston, Little, Brown & Co., 1968.
3. New York Stock Exchange. The Language of Investing, A Glossary. Student copies may be obtained from Watling, Lerchen & Co., 30100 Van Dyke, Warren, MI 48093.
4. New York Stock Exchange. The World of Investing, 1971 - order from School and College Relations, New York Stock Exchange, Inc., 11 Wall Street, New York, New York 10005. Free classroom sets when ordered by teacher.
5. New York Stock Exchange. You and the Investment World, 1971 - order from School and College Relations, New York Stock Exchange, Inc., 11 Wall Street, New York, New York 10005. Free classroom sets when ordered by teacher.
6. Paradis, Adrian A. The Bull and the Bears; How the Stock Exchange Works. New York, Hawthorn,1967.
7. Sarnoff, Paul. Wall Street Careers. New York, J. Messner, 1968.
8. Sterling, Dorothy. Wall Street: The Story of the Stock Exchange. New York, Doubleday, 1955.
9. Tyler, Poyntz. Securities, Exchanges, and the S. E. C. New York, Wilson, 1965.
10. Wood, James Playsted. What Is the Market? The Story of the Stock Exchange. New York, Meredity, 1966.


FILMS (F)


1. "Behind the Ticker Tape." American Stock Exchange, Press Relations Division, 86 Trinity Place, New York, NY 10006.
2. "Company for Lunch." Sterling Movies, 43 West 61st St., New York, NY 10023.
3. "How Stocks Are Bought and Sold." Sterling Movies, 43 West 61st St., New York, NY 10023.
4. "How to Invest and Why." Sterling Movies, 43 West 61st St., New York, New York 10023.
5. "Lady and the Stock Exchange." Modern Talking Picture Service, 15921 W. 8 Mile Rd., Detroit, MI 48235.
6. "Mr. Webster Takes Stock." Sterling Movies, 43 West 61st St., New York, NY 10023.
7. "What Makes Us Tick." Modern Talking Picture Service, 15921 W. 8 Mile Road, Detroit, MI 48235.
8. "Working Dollars." Modern Talking Picture Service, 15921 W. 8 Mile Road, Detroit, MI 48235.
9. "Your Share in Tomorrow." Modern Talking Picture Service, 15921 W. 8 Mile Road, Detroit, MI 48235.

TEACHER REFERENCE MATERIALS (TRM)

1. Engel, Louis. How to Buy Stocks. New York, Bantam Books, 1967.
2. Lockheed Missiles and Space Co., "Career Simulation System," Volume VIII, "Budget and Finance."
3. "Portfolio of Teaching Aids," New York Stock Exchange.
    a. Bond certificate sample
    b. "The Exchange" pamphlet
    c. "Moody's Handbook of Common Stocks"
    d. "New York Stock Exchange Common Stock Index" - wall chart
    e. "Reading Newspaper Stock Tables" - wall chart
    f. Stock certificate sample
    g. "Teacher's Manual to accompany You and the Investment World"
    h. "Understanding Bonds and Preferred Stocks" pamphlet
    i. "Understanding Financial Statements" pamphlet
    j. "Understanding the New York Stock Exchange" pamphlet
    k. "Wall Street Journal" sample newspaper prepared for the packet
4. S. R. A., Junior Occupational Briefs, "Finding Out About Securities Salesmen."
5. "Wall Street Journal" - write to Educational Service Bureau, Dow-Jones and Company, P. O. Box 300, Princeton, NJ 08540.
6. Watling, Lerchen and Co., 30100 Van Dyke, Warren, MI 48093. (Possibilities for field observations and occupational role models as guest speakers.)

All of the district's 47 schools participated in the program; degree of involvement varied from building to building.

BEST COPY AVAILABLE

## ELEMENTARY SCHOOLS AND PRINCIPALS

ANGUS--Richard Crampton
BEVER--William Brandt
BLACK--Anthony Wier
COUNTY LINE--Donald Daggy
CROMIE--Charles Nadeau
FILLMORE--Douglas Haesler
FROST--Owen Kelly
GREEN ACRES--Harry Bearse
HAITEMA--Robert McGhee
HARWOOD--Richard Ellis
HATHERLY--Leonard Feist
HESSE--Robert Smith
HOLDEN--Caroline Clayton
HOLLAND--William Block
LEAN--George Grice
MAPLE LANE--Arthur Horler
MARSHALL--Ann Cassin
MURTHUM--Leonard Piwko
NORTH--Donald Daggy
PENNOW--Hazen Ziegler
RINKE--Richard McBrien
ROCKWELL--Robert Cracknell
ST. ANNE'S--Gregory Owens
SHEPARD--Lee Gusta
SIERSMA--Dr. Harry Stanbury
SOUTH--Gerald Smigell
SUSICK--John Clifton
THORPE--Caroline Clayton
WARNER--Martin Faulman
WEBER--William Frazier
WILDE--Myra Rodgers
WILDWOOD--William Devich
WILKERSON--Frank Nagi
WILLOW WOODS--Alice Weiman

## JUNIOR HIGH SCHOOLS AND PRINCIPALS

BEER--Eugene Miller
BUTCHER--Ted Musial
CARLETON--Harvey Eckhardt
CARTER--Denis Reeves
FLYNN--George Grech
FUHRMANN--Philip Hutchins
GRISSOM--Hector Grant
HARTSIG--Paul Latham
MELBY--David Romig

## SENIOR HIGH SCHOOLS AND PRINCIPALS

COUSINO HIGH SCHOOL--Dr. Donald Stanbury
MOTT HIGH SCHOOL--Joseph Veramay
STERLING HEIGHTS HIGH SCHOOL--William Gordon
WARREN HIGH SCHOOL--Elmer Eschenberg